



State of Utah

GARY R. HERBERT  
Governor

GREG BELL  
Lieutenant Governor

1-15-2012  
Department of  
Environmental Quality

Amanda Smith  
Executive Director

DIVISION OF WATER QUALITY  
Walter L. Baker, P.E.  
Director

FILE COPY

Kim Shelley

DEC 11 2012

**CERTIFIED MAIL**  
**(Return Receipt Requested)**

Jerry Peterson  
Swift Beef Company  
410 North 200 West  
Hyrum, Utah 84319

Document Date 12/11/2012



DWQ-2012-004078

Dear Mr. Peterson:

Subject: Renewal of UPDES Permit No. UT0000281, Swift Beef Co.

Enclosed is UPDES permit No. UT0000281 for your facility. Copies of EPA form 3320-1, Discharge Monitoring Report (DMR) forms, for reporting and self-monitoring requirements as specified in the permit, will be sent as soon as printed. This permit will become effective on **January 1, 2013**, subject to the right of appeal in accordance with the provisions of *Utah Administrative Code*, Section R317-9.

A fee schedule was included in the Utah Department of Environmental Quality Budget appropriation request at the direction of the Legislature and in accordance with *Utah Code Annotated* 19-1-201. The fee schedule, as approved by the Legislature, includes a prescribed fee for a "Major Meat Products" category that will be collected annually. The invoice for the prescribed annual fee for your facility will be sent in the near future.

As the State agency charged with the administration of UPDES Permits, we are continuously looking for ways to improve our quality of service to you. In an effort to improve the UPDES permitting process we are asking for your input. Since our customer base is limited, your input is important. Please take a few moments to complete an online survey at [www.waterquality.utah.gov](http://www.waterquality.utah.gov) (click the "Give Feedback to DWQ" button on the left side of page). The results will be used to improve our quality and responsiveness to our permittees and give us feedback on customer satisfaction. We will address the issues you have identified on an ongoing basis.

If you have any questions with regard to this matter, please contact Kim Shelley at (801) 536-4385 or [kshelley@utah.gov](mailto:kshelley@utah.gov).

Sincerely,



John Kennington, P.E. Manager  
UPDES Engineering Section

JK:KS:mc

Enclosures (5):

1. DMR Data, (DWQ-2012-003792)
2. Fact Sheet/Statement of Basis, (DWQ-2012-003793)
3. WLA Irrigation, (DWQ-2012-003795)
4. WLA Non-Irrigation Season, (DWQ-2012-003796)
5. DMR Data, (DWQ-2012-003792)

cc: Amy Clark, EPA Region VIII (w/encl)  
Stacy Carroll, DWQ Accounts (w/o encl)  
Grant Koford, Bear River Health Department  
Don Summit, Environmental Sustainability Coordinator, Swift Beef Hyrum Plant

DWQ-2012-003791.doc

FILE COPY

STATE OF UTAH  
DIVISION OF WATER QUALITY  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
SALT LAKE CITY, UTAH

AUTHORIZATION TO DISCHARGE UNDER THE  
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(UPDES)

In compliance with provisions of the *Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended* (the "Act"),

**SWIFT BEEF COMPANY**

is hereby authorized to discharge from its facility located at 410 North 200 West, Hyrum, Utah, located in Cache County, with Outfall 001 located at latitude 41°39'21" and longitude 111°52'05",


**to a ditch which flows to the South Fork of Spring Creek,**

and to distribute effluent for reuse in accordance with discharge points, effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on January 1, 2013

This modified permit expires at midnight, December 31, 2017

Signed the 10 th day of December, 2012

  
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Walter L. Baker, P.E.  
Director  
Utah Division of Water Quality



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## I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

### A. Definitions.

1. The "30-day and monthly average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.
2. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single sample or instantaneous measurement.
3. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.
4. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
5. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
6. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
7. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
8. "Director" means Director of the Utah Water Quality Board.
9. "EPA" means the United States Environmental Protection Agency.
10. "Act" means the "*Utah Water Quality Act*".
11. "Best Management Practices" ("*BMP's*") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. *BMP's* also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
12. "*CWA*" means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

13. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharges. This term does not include return flows from irrigated agriculture or agriculture storm water runoff.
14. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311* of the *Clean Water Act* (see *40 CFR 110.10* and *40 CFR 117.21*) or *Section 102* of *CERCLA* (see *40 CFR 302.4*).
15. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.
16. "Type II Reuse" means the use of treated wastewater where human exposure is unlikely.

B. Description of Discharge Points.

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are in violation of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Number

001

Location of Discharge Points

The discharge pipe is located in the northwest corner of the wastewater treatment plant property between 200 West and 500 West in Hyrum City, Cache County at latitude 49°39'21" and longitude 111°52'05". The water is discharged inside the fenced area and flows under the chain link fence to the receiving irrigation ditch.

001R

Treated effluent for reuse will be stored in Pond 5 at the wastewater treatment plant until it is needed in the irrigation distribution system owned and operated by Miller Farms, LLC. The effluent will be used to irrigate crops in fields near the treatment plant.

C. Narrative Standard.

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause



conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

D. Specific Limitations & Self-Monitoring Requirements for Surface Water Discharge at Outfall 001.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations a/b/			
	Max Monthly Avg.	Max Weekly Avg.	Daily Min	Daily Max
Flow, MGD	2.0			
BOD <sub>5</sub> , mg/L	25	35		
BOD <sub>5</sub> , lbs/day	510			1021
TSS, mg/L	25	35		
TSS, lbs/day	607			1215
Fecal Coliforms, No./100mL				400
E.-coli, No./100mL	126	158		
TRC, mg/L, October - March				0.15
TRC, mg/L, April-September				0.25
Oil & Grease, mg/L				10
Oil & Grease, lbs/day	194			389
Phosphorus, mg/L	1			
Ammonia as N, mg/L, October-March	4.0			8.0
Ammonia as N, mg/L, April-September	3.0			8.0
Nitrogen as N, mg/L	134			194
TDS, mg/L, April-September				3,000
TDS, mg/L, October-March				3,600
pH, SU			6.5	9.0
Dissolved Oxygen, mg/L, October – March			4.0	

Parameter	Effluent Limitations a/b/			
	Max Monthly Avg.	Max Weekly Avg.	Daily Min	Daily Max
Dissolved Oxygen, mg/L, April – September			4.0	

a/ See Part I for definition of terms.

b/ There shall be no visible sheen or floating solids or visible foam in other than trace amounts. There shall be no discharge of sanitary wastes.

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Weekly	Composite	mg/L
Fecal Coliforms	Weekly	Grab	No./100mL
E-Coli	Weekly	Grab	No./100mL
TRC	Weekly	Grab	mg/L
Oil & Grease	Weekly	Grab	mg/L
Phosphorus	Twice Weekly	Composite	mg/L
Ammonia as N	Twice Weekly	Grab	mg/L
Nitrogen as N	Weekly	Composite	mg/L
TDS	Weekly	Grab	mg/L
pH	Weekly	Grab	mg/L
Dissolved Oxygen	Weekly	Grab	mg/L
Nitrate/Nitrite (as N)	Monthly	Composite	mg/L

a/ See Part I for definition of terms.

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at Outfall 001 prior to mixing with the receiving stream.
3. Acute Whole Effluent Toxicity (WET) Testing.

*Whole Effluent Testing – Acute Toxicity.* Starting immediately, the permittee shall conduct acute static replacement toxicity tests on a composite sample of the final effluent. The sample shall be collected at Outfall 001.

The monitoring frequency for acute tests shall be quarterly unless a sample is found to be acutely toxic during a routine test. If that occurs, the monitoring frequency shall become weekly (See *Part I.8.b, Accelerated Testing*). Samples shall be collected on a two day progression; i.e., if the first sample is on a Monday, during the next sampling period, the sampling shall begin on a Wednesday, etc.

The replacement static acute toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5<sup>th</sup> Edition*, (EPA 821/R/02/012), October 2002, as per 40 CFR 136.3(a) TABLE 1A-LIST OF APPROVED BIOLOGICAL METHODS. The permittee shall conduct the 48-hour static replacement toxicity test using Ceriodaphnia dubia and the acute 96-hour static replacement toxicity test using Pimephales promelas (fathead minnow).

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration ( $LC_{50}$ ). Mortality in the control must simultaneously be 10 percent or less for the results to be considered valid. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control mortality is achieved. A variance to this requirement may be granted by the Director if a mortality of less than 10 percent was observed in higher effluent dilutions.

If the permit contains a total residual chlorine limitation greater than 0.20 mg/L, the permittee may request from the Director approval to dechlorinate the sample, or collect the sample prior to chlorination.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting calendar quarter e.g., biomonitoring results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining biomonitoring reports submitted with DMRs due each July 28, October 28, and January 28). All test results shall be reported along with the DMR submitted for that reporting period. The format for the report shall be consistent with the latest revision of the *Region VIII Guidance for Acute Whole Effluent Reporting (August, 1997)* and shall include all chemical and physical data as specified.

If the results for a minimum of ten consecutive tests for each test species indicate no acute toxicity, the permittee may request a reduction in testing frequency and/or reduction of test species. The Director may approve, partially approve, or deny the request based on results and other available information. If approval is given, the modification will take place without a public notice.

- a. *Accelerated Testing*. When acute toxicity is indicated during routine biomonitoring as specified in this permit, the permittee shall notify the Director in writing within five (5) days after becoming aware of the test result. The permittee shall perform an accelerated schedule of biomonitoring to establish whether a pattern of toxicity exists. Accelerated testing will begin within seven (7) days after the permittee becomes aware of the test result. Accelerated testing shall be conducted as specified under *Part I.C.3.c., Pattern of*

*Toxicity.* If the accelerated testing demonstrates no pattern of toxicity, routine monitoring shall be resumed.

- b. *Pattern of Toxicity.* A pattern of toxicity is defined by the results of a series of up to five (5) biomonitoring tests pursuant to the accelerated testing requirements using 100 percent effluent on the single species found to be more sensitive, once every week for up to five (5) consecutive weeks.

If two (2) consecutive tests (not including the scheduled quarterly or monthly test which triggered the search for a pattern of toxicity) do not result in acute toxicity, no further accelerated testing will be required and no pattern of toxicity will be found to exist. The permittee will provide written verification to the Director within five (5) days, and resume routine monitoring.

A pattern of toxicity is established if one of the following occurs:

- (1) If two (2) consecutive test results (not including the scheduled quarterly or monthly test, which triggered the search for a pattern of toxicity) indicate acute toxicity, this constitutes an established pattern of toxicity.
- (2) If consecutive tests continue to yield differing results each time, the permittee will be required to conduct up to a maximum of five (5) acute tests (not including the scheduled quarterly or monthly test which triggered the search for a pattern of toxicity). If three out of five test results indicate acute toxicity, this will constitute an established pattern of toxicity.

c. *Preliminary Toxicity Investigation.*

- (1) When a pattern of toxicity is detected the permittee will notify the Director in writing within five (5) days and begin an evaluation of the possible causes of the toxicity. The permittee will have fifteen (15) working days from demonstration of the pattern to complete a Preliminary Toxicity Investigation (PTI) and submit a written report of the results to the Director. The PTI may include, but is not limited to, additional chemical and biological monitoring, examination of pretreatment program records, examination of discharge monitoring reports, a thorough review of the testing protocol, evaluation of treatment processes and chemical use, inspection of material storage and transfer areas to determine if a spill may have occurred, and similar procedures.
- (2) If the PTI identifies a probable toxicant and/or a probable source of toxicity the permittee shall submit, as part of its final results written notification of that effect to the Director. Within thirty (30) days of completing the PTI the permittee shall submit for approval a control program to control effluent toxicity and shall proceed to implement such a plan within seven (7) days following approval. The control program, as submitted to or revised by the Director, may be incorporated into the permit.

- (3) If no probable explanation for toxicity is identified in the PTI, the permittee shall notify the Director as part of its final report, along with a schedule for conducting a Phase I Toxicity Reduction Evaluation (TRE) (See *Part I.C.3.e., Toxicity Reduction Evaluation*).
  - (4) If toxicity spontaneously disappears during the PTI, the permittee shall submit written notification to that effect to the Director as part of the reporting requirements of paragraph a. of this section.
- d. *Toxicity Reduction Evaluation (TRE)*. If toxicity is detected during the life of this permit and it is determined by the Director that a TRE is necessary, the permittee shall be so notified and shall initiate a TRE immediately thereafter. The purpose of the TRE will be to establish the cause of toxicity, locate the source(s) of the toxicity, and control or provide treatment for the toxicity.

A TRE may include but is not limited to one, all, or a combination of the following:

- (1) Phase I – Toxicity Characterization
- (2) Phase II – Toxicity Identification Procedures
- (3) Phase III – Toxicity Control Procedures
- (4) Any other appropriate procedures for toxicity source elimination and control.

If the TRE establishes that the toxicity cannot be immediately eliminated, the permittee shall submit a proposed compliance plan to the Director. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the Director, this permit may be reopened and modified.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations, the permittee may:

- (a) Submit an alternative control program for compliance with the numerical requirements.
- (b) If necessary, provide a modified biomonitoring protocol, which compensates for the pollutant(s) being controlled numerically.

If acceptable to the Director, this permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the Director, and/or a modified biomonitoring protocol.

Failure to conduct an adequate TRE, or failure to submit a plan or program as described above, or the submittal of a plan or program judged inadequate by the Director, shall be considered a violation of this permit.

- E. Specific Limitations and Self-monitoring Requirements for Reuse at Outfall 001R:  
Effective immediately and lasting the duration of this permit, the permittee is authorized to distribute effluent for reuse from Outfall 001R. Distribution of effluent shall be limited and monitored by the permittee as specified below:

Parameter	Type II Reuse Limitations a/			
	Max Monthly Avg.	Max Weekly Avg.	Daily Min	Daily Max
BOD <sub>5</sub> , mg/L	25			
TSS, mg/L	25	35		
E.-coli, No./100mL		126		500 b/
pH, SU			6.0	9.0

a/ See Part I for definition of terms.

b/ No sample shall exceed this value.

Self-Monitoring and Reporting Requirements for Type II Reuse a/ b/			
Parameter	Frequency	Sample Type	Units
Total Flow c/	Continuous	Recorder	MGD
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Daily	Composite	mg/L
E-Coli	Daily	Grab	No./100mL
pH	Daily	Grab	mg/L

a/ See Part I for definition of terms.

b/ An alternative disposal option or diversion to storage must be available in case quality requirements are not met.

c/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

## II. STORMWATER DISCHARGE REQUIREMENTS

### A. Non-Storm Water Discharges.

The following non-storm water discharges may be authorized to discharge with storm water by this permit: discharges from fire fighting activities; fire hydrant flushings; potable water sources including waterline flushings; drinking fountain water; irrigation drainage; lawn watering; routine external building washdown that does not use detergents or other compounds; pavement washwaters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

### B. Storm Water Pollution Prevention Plan.

1. The permittee shall prepare a storm water pollution prevention plan for all areas that do not drain to the wastewater treatment plant.
  - a. Storm water treatment and/or handling shall be accomplished with the use of BMP's, management, or facilities using good engineering practices to address water quality issues (see also paragraph 2. below).
  - b. The storm water plan shall be completed and implemented by 24 months after the issuance date of this permit.
2. Contents of Plan. The plan shall include the following items:
  - a. Pollution Prevention Team. Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.
  - b. Description of Potential Pollutant Sources. Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials which may potentially be significant pollutant sources. Each plan shall include, at a minimum:
    - (1) Drainage. A site map indicating the pattern of storm water drainage, existing structural control measures to reduce pollutants in storm water runoff, surface water bodies, locations where significant materials are exposed to precipitation, and locations where major spills or leaks identified under paragraph B.2.b.(3) (Spills and Leaks) of this section have occurred in the past 3 years. The map must also indicate the locations of all industrial activities that are exposed to precipitation, including, but not limited to: loading/unloading areas; vehicle fueling; vehicle and equipment maintenance and/or cleaning areas; waste treatment, storage and disposal locations; liquid

storage tanks; vents and stacks from cooking, drying, and similar operations, dry product vacuum transfer lines; animal holding pens; spoiled product and broken product container storage areas; significant dust or particulate generating areas; and any other processing and storage areas exposed to storm water. Flows with a significant potential for causing erosion shall also be identified. In addition, the site map must identify monitoring locations. In addition, the map must indicate the outfall locations and the types of discharges contained in the drainage areas of the outfalls.

- (2) Inventory of Exposed Materials. An inventory of the types of materials handled at the site that is or is likely to be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water from the past 3 years; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the past 3 years; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.
- (3) Spills and Leaks. A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility in the past 3 years. Such list shall be updated as appropriate during the term of the permit.
- (4) Sampling Data. A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.
- (5) Summary of Potential Pollutant Sources. The description of potential pollutant sources culminates in a narrative assessment of the risk potential that the industrial activities, materials, and physical features of the site, as identified in *B.2.b(1)* (drainage), pose to storm water quality. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter (e.g., biochemical oxygen demand, oil and grease, etc.) of concern shall be identified.

In addition to food and kindred products processing-related industrial activities, the plan must also describe application/storage of pest control chemicals (e.g., rodenticides, insecticides, fungicides, and others) used on plant grounds, including a description of pest control application and chemical storage practices.

- c. Measures and Controls. Each facility covered by this permit shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:



- (1) Good Housekeeping. Good housekeeping requires the maintenance of areas which may contribute pollutants to storm waters discharges in a clean, orderly manner.
- (2) Preventive Maintenance. A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
- (3) Spill Prevention and Response Procedures. Areas where potential spills which can contribute pollutants to storm water discharges can occur, and their accompanying drainage points shall be identified clearly in the storm water pollution prevention plan. Areas that must be identified should include loading/unloading stations, outdoor storage areas, and waste management areas exposed to storm water. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up should be available to personnel.
- (4) Inspections. In addition to the comprehensive site evaluation required under paragraph *B.2.d.* of this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility. At a minimum, the following areas, where the potential for exposure to storm water exists, must be inspected on a regularly scheduled basis: loading and unloading areas for all significant materials; storage areas, including associated containment areas; waste management units; vents and stacks emanating from industrial activities; spoiled product and broken product container holding areas; animal holding pens; staging areas; and air pollution control equipment. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. Based on the results of the inspection, the description of potential pollutant sources and pollution prevention measures and controls identified in the plan shall be revised as appropriate within 2 weeks of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the inspection.
- (5) Employee Training. Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping, material management practices, unloading/loading practices, outdoor storage areas, waste management practices, pest control, and improper connections to the storm sewer. At a minimum, this training must be provided annually. The pollution prevention

plan shall identify frequencies and approximate dates for such training.

- (6) Recordkeeping and Internal Reporting Procedures. A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan. Ineffective BMPs must be recorded and the date of their corrective actions noted in the plan.
- (7) Non-storm Water Discharges.
  - (a) Certification. The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part V.G.* of this permit. Such certification may not be feasible if the facility operating the storm water discharge associated with industrial activity does not have access to an outfall, manhole, or other point of access to the ultimate conduit which receives the discharge. In such cases, the source identification section of the storm water pollution prevention plan shall indicate why the certification required by this part was not feasible, along with the identification of potential significant sources of non-storm water at the site. A discharger that is unable to provide the certification required by this paragraph must notify the *Executive Secretary* in accordance with paragraph *B.2.c(7)(c)* (Failure to Certify) (below) of this section.
  - (b) Exceptions. Except for flows from fire fighting activities, sources of non-storm water listed in *Part II.A. (Non-storm Water Discharges)* of this permit that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
  - (c) Failure to Certify. Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the *Executive Secretary* by October 1, 2010. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to

waters of the State which are not authorized by this permit are unlawful and must be terminated.

- (8) Sediment and Erosion Control. The plan shall identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
  - (9) Management of Runoff. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity [see paragraph *B.2.b. (Description of Potential Pollutant Sources)* of this permit] shall be considered when determining reasonable and appropriate measures. Appropriate measures or equivalent measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices.
- d. Comprehensive Site Compliance Evaluation. Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Where compliance evaluation schedules overlap with inspections required under *B.2.c(4)* of this section, the compliance evaluation may be conducted in place of one such inspection. Such evaluations shall provide:
- (1) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.
  - (2) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with paragraph *B.2.b. (Description of Potential Pollutant Sources)* of this section and pollution prevention measures and controls identified in the plan in accordance with paragraph *B.2.c. (Measures and Controls)* of this section shall be revised as appropriate within 2 weeks of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case

more than 12 weeks after the inspection.

- (3) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph *B.2.d(2)* (above) of this section shall be made and retained as part of the storm water pollution prevention plan for at least 3 years from the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part V.G.* (Signatory Requirements) of this permit.
- (4) The storm water pollution prevention plan must describe the scope and content of the comprehensive site evaluations that qualified personnel will conduct to 1) confirm the accuracy of the description of potential sources contained in the plan, 2) determine the effectiveness of the plan, and 3) assess compliance with the terms and conditions of the permit. The individual or individuals who will conduct the evaluations must be identified in the plan and should be members of the pollution prevention team, as identified in paragraph *B.2.a* (Pollution Prevention Team).

### III. MONITORING, RECORDING AND REPORTING REQUIREMENTS

- A. Representative Sampling.  
Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.
- B. Monitoring Procedures.  
Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10*, unless other test procedures have been specified in this permit.
- C. Penalties for Tampering.  
The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. Reporting of Monitoring Results.  
Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), post-marked no later than the 28th day of the month following the completed reporting period. The first report is due on January 28, 2013. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part V.G)*, and submitted to the Director, Division of Water Quality and to EPA at the following addresses:
- original to: Department of Environmental Quality  
Division of Water Quality  
195 North 1950 West  
PO Box 144870  
Salt Lake City, Utah 84114-4870
- E. Compliance Schedules.  
Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- F. Additional Monitoring by the Permittee.  
If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* or as otherwise specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

G. Records Contents.

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

H. Retention of Records.

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location.

I. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance which may seriously endanger health or environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24 hour answering service (801) 536-4123.
2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:
  - a. Any noncompliance which may endanger health or the environment;
  - b. Any unanticipated bypass which exceeds any effluent limitation in the permit (See *Part IV.G, Bypass of Treatment Facilities.*);
  - c. Any upset which exceeds any effluent limitation in the permit (See *Part IV.H, Upset Conditions.*); or,
  - d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.
3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
  - a. A description of the noncompliance and its cause;

- b. The period of noncompliance, including exact dates and times;
  - c. The estimated time noncompliance is expected to continue if it has not been corrected;
  - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance;
  - e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.
- 4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.
  - 5. Reports shall be submitted to the addresses in *Part III.D, Reporting of Monitoring Results*.

J. Other Noncompliance Reporting.

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part III.D* are submitted. The reports shall contain the information listed in *Part III.I.3*.

K. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- 1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
- 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- 3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
- 4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location.

#### IV. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply.

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions.

The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions of the Act is subject to a fine not exceeding \$25,000 per day of violation; Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding \$50,000 per day. Except as provided at *Part IV.G, Bypass of Treatment Facilities* and *Part IV.H, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate.

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances.

Collected screening, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.



G. Bypass of Treatment Facilities.

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to 2. and 3. of this section.
2. Prohibition of Bypass.
  - a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
    - (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;
    - (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
    - (3) The permittee submitted notices as required under section G.3.
  - b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in sections G.2a. (1), (2) and (3).
3. Notice.
  - a. Anticipated bypass. Except as provided above in section G.2. and below in section G. 3.b, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:
    - (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages;
    - (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;
    - (3) Description of specific measures to be taken to minimize environmental and public health impacts;

- (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;
  - (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and
  - (6) Any additional information requested by the Director.
- b. Emergency Bypass. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in section G.3.a.(1) through (6) to the extent practicable.
- c. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the Director as required under Part III.I., Twenty Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2. of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.
2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
  - b. The permitted facility was at the time being properly operated;
  - c. The permittee submitted notice of the upset as required under Part III.I., Twenty-four Hour Notice of Noncompliance Reporting; and,
  - d. The permittee complied with any remedial measures required under Part IV.D, Duty to Mitigate.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants.

The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of *The Water Quality Act of 1987* for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

J. Changes in Discharge of Toxic Substances.

Notification shall be provided to the Director as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - a. One hundred micrograms per liter (100 ug/L);
  - b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.5(7)* or (10); or,
  - d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - a. Five hundred micrograms per liter (500 ug/L);
  - b. One milligram per liter (1 mg/L) for antimony;
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.5(9)*; or,
  - d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.

K. Industrial Pretreatment.

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of *The Water Quality Act of 1987*, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment

Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

## V. GENERAL REQUIREMENTS

A. Planned Changes.

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance.

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply.

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information.

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

F. Other Information.

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

G. Signatory Requirements.

All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described above and submitted to the Director, and,
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to authorization. If an authorization under paragraph V.G.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph V.G.2 must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports.

The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports.

Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential

J. Oil and Hazardous Substance Liability.

Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights.

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability.

The provisions of this permit are severable, and if any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers.

This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

N. State Laws.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117*.

O. Water Quality-Reopener Provision.

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. Toxicity Limitation-Reopener Provision.

This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

Q. Storm Water-Reopener Provision.

At anytime during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to “waters-of-the-State”.



**FACT SHEET STATEMENT OF BASIS  
SWIFT BEEF COMPANY  
UPDES PERMIT NUMBER: UT0000281  
PERMIT RENEWAL  
MAJOR INDUSTRIAL**

FILE COPY

**FACILITY LOCATION & CONTACTS**

<u>Name</u>	<u>Position</u>	<u>Phone</u>
Jerry Peterson	General Manager/ VP of Operations	435-245-6456
Don Summit	Environmental and Sustainability Manger	435-245-2351

<u>Facility Name</u>	<u>Mailing Address</u>
Swift Beef Company, Hyrum Plant	410 North 200 West Hyrum, Utah 84319-1024

**DESCRIPTION OF FACILITY**

Swift Beef Company, formerly known as EA Miller, is a beef slaughterhouse and meat packing plant. It is defined as a complex slaughterhouse in 40 CFR 432.21 and Standard Industrial Classification Code 2011 applies. The facility is located in Hyrum, Cache County, Utah. The treatment plant is approximately 0.75 miles north of the slaughter/packing plant.

The slaughterhouse operations began in 1935. Since then, the operation has grown both in number of cattle processed and number of products produced. In 2011, the facility processed 466 million pounds of beef and beef byproducts. The products produced include boxed beef, ground beef, beef flavorings, gravy mix, edible and inedible tallow, hides, tripe, organ meats, bone meal, blood products and pet food.

The facility was upgraded in 2011 to provide treatment for significant reductions in phosphorus in the effluent as required by the Spring Creek TMDL.

**DISCRIPTION OF DISCHARGE**

Wastewater is collected from the following operations: blood and hide processing, the on-site rendering facility, storm water runoff, holding pen runoff, production area cleaning water, equipment washing, steam making, freshly slaughtered beef washing and paunch washings.

The wastewater treatment process has changed since the last permit renewal. It consists of rotary screens and a dissolved air flotation unit at the processing plant to remove grease and solids followed by a grit settling tank and influent flow meter. Flow is then split between anaerobic lagoons and the newly constructed aeration basins. The activated sludge system has changed to utilize the Modified Ludzack-Ettinger (MLE) process which consists of a two stage anoxic and aeration basins followed by four clarifiers, two disk filters, UV disinfection or chlorination followed by sodium bisulfate prior to discharging at Outfall 001.

Swift's self-monitoring data for the last three years is included as an appendix to this document. The data demonstrates that the facility has had difficulty maintaining compliance with the permit

effluent limits with the pervious treatment plant. However, it is expected that with the upgraded plant, the facility should be able to maintain compliance with the effluent limits consistently during this permit cycle.

<u>Outfall 001</u>	<u>Description of Discharge Point</u>
001	The discharge pipe is located in the northwest corner of the wastewater treatment plant property between 200 West and 500 West in Hyrum City, Cache County at latitude 49°39'21" and longitude 111°52'05". The water is discharged inside the fenced area and flows under the chain-link fence to the receiving irrigation ditch.
001R	Treated effluent for reuse will be stored in Pond 5 at the wastewater treatment plant until it is needed in the irrigation distribution system owned and operated by Miller Farms, LLC. The effluent will be used to irrigate crops in fields near the treatment plant.

### **RECEIVING WATERS AND STREAM CLASSIFICATION**

Swift discharges to an irrigation ditch which is a tributary to Spring Creek. The beneficial use classification for Spring Creek is:

- Class 2B: Protected for secondary contact recreation such as boating, wading or similar uses.
- Class 3A: Protected for cold water species of game fish and other cold water aquatic life, including the necessary organisms in their food chain.
- Class 3D: Protected for waterfowl, shore birds and other water oriented wildlife not included in Class 3A, 3B or 3C, including the necessary aquatic organisms in their food chain.
- Class 4: Protected for agricultural uses including irrigation of crops and stock watering.

### **SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

The phosphorus concentration limit is based upon reductions required in the Spring Creek TMDL. The TMDL was not written to allow for a phased approach, however, given the magnitude of the reductions required the DWQ will require Swift to meet a 1 mg/L phosphorus concentration in the effluent for this permit cycle. The effects on Spring Creek will be monitored and at the end of this permit cycle the DWQ will determine if Swift must meet the phosphorus effluent limit called for in the TMDL. It should be noted that Swift Beef's upgraded treatment plant has reduced the phosphorus concentration in the effluent from an average of 26 mg/L for the timeframe of May 2006 to March 2011 to an average of 0.77 mg/L since April 2011.

Swift Beef has requested the option to distribute most or all of their effluent for reuse during the irrigation season of April through October. The effluent will be used to irrigate agricultural fields near the wastewater treatment plant owned by Miller Farms LLC. Water intended for reuse will bypass the filter building and be stored in Ponds 4 and 5 until it can be reused. Swift Beef will chlorinate the water before it is drawn into the irrigation system. It is anticipated that Miller Farms will reuse all of the effluent during the irrigation season to grow short grains, alfalfa and silage corn. The facility will be required to meet Type II Reuse effluent standards as per UAC R317-3-11.5.

Mass effluent limits for 5-day biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS) have increased from the previous permit. This is due to the Live Weight Killed (LWK) and/or number of head of cattle increasing from the last permit cycle.

### **BASIS FOR EFFLUENT LIMITATIONS**

Effluent concentration limitations on TSS, BOD<sub>5</sub>, E-coli concentrations and pH are based upon current Utah Secondary Treatment Standards, UAC R317-1-3.2.

The effluent limitations for flow, total dissolved solids (TDS), total residual chlorine (TRC), and dissolved oxygen are based upon the wasteload analysis. The Oil & Grease limitation is based upon best professional judgment (BPJ).

Mass limits for TSS, BOD<sub>5</sub>, Oil and Grease and fecal coliforms are based on 40 CFR 432.22. A LWK value of 2,430 pounds per day per 1000 lbs was used to calculate the mass loading limits. The concentration limits on ammonia and nitrogen are based upon 40 CFR 432.22 and 40 CFR 432.13.

The phosphorus concentration limit is based upon reductions required in the Spring Creek TMDL.

The permit limits for Outfall 001 are as follows:

Parameter	Effluent Limitations a/b/			
	Max Monthly Avg.	Max Weekly Avg.	Daily Min	Daily Max
Flow, MGD	2.0			
BOD <sub>5</sub> , mg/L	25	35		
BOD <sub>5</sub> , lbs/day	510			1021
TSS, mg/L	25	35		
TSS, lbs/day	607			1215
Fecal Coliforms, No./100mL				400
E.-coli, No./100mL	126	158		
TRC, mg/L, October - March				0.15
TRC, mg/L, April-September				0.25
Oil & Grease, mg/L				10
Oil & Grease, lbs/day	194			389
Phosphorus, mg/L	1			
Ammonia as N, mg/L, October-March	4.0			8.0
Ammonia as N, mg/L, April-September	3.0			8.0

Parameter	Effluent Limitations a/b/			
	Max Monthly Avg.	Max Weekly Avg.	Daily Min	Daily Max
Nitrogen as N, mg/L	134			194
TDS, mg/L, April-September				3,000
TDS, mg/L, October-March				3,600
pH, SU			6.5	9.0
Dissolved Oxygen, mg/L, October – March			4.0	
Dissolved Oxygen, mg/L, April – September			4.0	

a/ See Part I for definition of terms.

b/ There shall be no visible sheen or floating solids or visible foam in other than trace amounts. There shall be no discharge of sanitary wastes.

The Type II Reuse limitations for BOD<sub>5</sub>, TSS, E-Coli and pH are based upon UAC R317-3-11.5.

The Type II Reuse limits for Outfall 001R are as follows:

Parameter	Type II Reuse Limitations a/			
	Max Monthly Avg.	Max Weekly Avg.	Daily Min	Daily Max
BOD <sub>5</sub> , mg/L	25			
TSS, mg/L	25	35		
E.-coli, No./100mL		126		500 b/
pH, SU			6.0	9.0

a/ See definitions Part I for definition of terms.

b/ No sample shall exceed this value.

### **SELF MONITORING AND REPORTING REQUIREMENTS**

The following self-monitoring requirements are the same as in the previous permit. The permit will require reports to be submitted monthly and quarterly, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

Self-Monitoring and Reporting Requirements a/			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Weekly	Composite	mg/L
Fecal Coliforms	Weekly	Grab	No./100mL
E-Coli	Weekly	Grab	No./100mL

TRC	Weekly	Grab	mg/L
Oil & Grease	Weekly	Grab	mg/L
Phosphorus	Twice Weekly	Composite	mg/L
Ammonia as N	Twice Weekly	Grab	mg/L
Nitrogen as N	Weekly	Composite	mg/L
TDS	Weekly	Grab	mg/L
pH	Weekly	Grab	mg/L
Dissolved Oxygen	Weekly	Grab	mg/L
Nitrate/Nitrite (as N)	Monthly	Composite	mg/L

a/ See Part I for definition of terms.

<b>Self-Monitoring and Reporting Requirements for Type II Reuse a/ b/</b>			
Parameter	Frequency	Sample Type	Units
Total Flow c/	Continuous	Recorder	MGD
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Daily	Composite	mg/L
E-Coli	Daily	Grab	No./100mL
pH	Daily	Grab	mg/L

a/ See Part I for definition of terms.

b/ An alternative disposal option or diversion to storage must be available in case quality requirements are not met.

c/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

### **BIOMONITORING REQUIREMENTS**

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control* (biomonitoring). Authority to require effluent biomonitoring is provided in *Establishing Permit Conditions*, UAC R317-8-4.2, *Permit Provisions*, UAC R317-8-5.3 and *Water Quality Standards*, UAC R317-2-5 and R317-2-7.2.

Since the permittee is a major industrial discharger, the renewal permit will require whole effluent toxicity (WET) testing. Upon the effective date of the permit, the permittee shall conduct quarterly acute static replacement toxicity tests on a composite sample of the final effluent at Outfall 001.

The permit will contain the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary.

Acute and chronic WET limits are not included in the renewal permit because there is no reasonable potential for toxicity due to the high level of treatment provided by the newly upgraded treatment plant.

Chronic WET testing requirements will not be included in the renewal permit, as the same with the previous permit, because the facility discharges directly to an irrigation ditch which then flows approximately 2 miles to Spring Creek, a Class 3A stream. This approach is consistent with the biomonitoring policy.

### **STORM WATER PROVISIONS**

A storm water pollution prevention plan requirement has been included in the permit for all storm water on industrially regulated areas that drains off the site unless it is treated and discharged through the UPDES permitted wastewater discharge outfall.

### **ANTIDEGREDATION REVIEW**

Antidegradation Reviews are intended to ensure that waters that have better quality than required by the standards are not degraded unless the degradation is necessary for important social or economic reasons.

A Level I Antidegradation Review (wasteload analysis) was conducted for discharges to Spring Creek and is included as an addendum to the FSSOB. The Level I ADR concluded that a Level II ADR was not required, because the facility is being renewed without increases in the effluent flow or concentrations.

The DWQ concurs with the findings of the Level I which indicates that the effluent limitations should be sufficiently protective of water quality.

### **PERMIT DURATION**

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by

Kim Shelley  
Utah Division of Water Quality

### **PUBLIC NOTICE**

Began: October 13, 2012

Ended: November 13, 2012

Public Noticed in The Herald Journal

No comments were received during the public comment period. Therefore, the permit and FSSOB are the same as the draft documents that were public noticed.

**WASTELOAD ANALYSIS [WLA]  
Addendum: Statement of Basis  
SUMMARY**

Date: 9/13/2012

Time: 1:39 PM

**Discharging Facility:** EA Miller

UPDES No: UT00000281  
Current Flow: 2.00 MGD  
Design Flow: 2.00 MGD

**Irrigation Season (April - September)** ←

**Receiving Water:** Ditch to So. Fork of Spring Creek  
**Stream Classification:** 2B, 3A, 3B, 4      Controlling: 3A  
**Stream Flows [cfs]:**  
0.10 Summer (July-Sept)      Critical Low Flow  
- Fall (Oct-Dec)      Critical Low Flow  
0.12 Winter (Jan-Mar)      Critical Low Flow  
- Spring (Apr-June)      Critical Low Flow

**Stream TDS Values**  
[mg/l as CaCO<sub>3</sub>]  
- Summer (July-Sept)  
- Fall (Oct-Dec)  
- Winter (Jan-Mar)  
- Spring (Apr-June)


Parameter:	Effluent Limits:	WQ Standard:
Summer Flow, MGD:	2.00 MGD	
BOD, mg/l:	25.00 Summer	5.0 Indicator
Dissolved Oxygen, mg/l:	4.00 Summer	6.5 30 Day Average
NH <sub>4</sub>	3.00 Summer	Varies with pH and Temperature
TDS, mg/l:	3,000.00 Summer	1450.00 mg/l

**Modeling Parameters:**

Acute River Width: 50.0%  
Chronic River Width: 100.0%

**Antidegradation Review:**

An Antidegradation Level I Review was completed.  
**Antidegradation Level II Review is NOT Required**

**Permit Writer:****WLA by:****WQM Sec. Approval:****TMDL Sec. Approval:**

9-14-12

**WASTELOAD ANALYSIS [WLA]**  
**Addendum: Statement of Basis**

 Date: 9/13/2012  
 Time: 1:39 PM

 Facilities: EA Miller  
 Discharging to: Ditch to So. Fork of Spring Creek

UPDES No: UT00000281

**I. Introduction**

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated in terms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

**II. Receiving Water and Stream Classification**

Ditch to So. Fork of Spring Creek	2B, 3A, 3B, 4
Antidegradation Review:	Antidegradation Level II Review is NOT Required

**III. Numeric Stream Standards for Protection of Aquatic Wildlife**

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	6.50 mg/l (30 Day Average) N/A mg/l (7Day Average) 3.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

**Acute and Chronic Heavy Metals (Dissolved)**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Aluminum	87.00 ug/l**	0.047 lbs/day	750.00 ug/l	0.404 lbs/day
Arsenic	190.00 ug/l	0.102 lbs/day	340.00 ug/l	0.183 lbs/day
Cadmium	0.75 ug/l	0.000 lbs/day	8.66 ug/l	0.005 lbs/day
Chromium III	266.50 ug/l	0.144 lbs/day	5575.67 ug/l	3.005 lbs/day
Chromium VI	11.00 ug/l	0.006 lbs/day	16.00 ug/l	0.009 lbs/day
Copper	30.30 ug/l	0.016 lbs/day	51.30 ug/l	0.028 lbs/day
Iron			1000.00 ug/l	0.539 lbs/day
Lead	18.40 ug/l	0.010 lbs/day	472.07 ug/l	0.254 lbs/day
Mercury	0.012 ug/l	0.000 lbs/day	2.40 ug/l	0.001 lbs/day
Nickel	167.42 ug/l	0.090 lbs/day	1505.87 ug/l	0.812 lbs/day



Selenium	4.60 ug/l	0.002 lbs/day	20.00 ug/l	0.011 lbs/day
Silver	N/A ug/l	N/A lbs/day	40.52 ug/l	0.022 lbs/day
Zinc	385.26 ug/l	0.208 lbs/day	385.26 ug/l	0.208 lbs/day

\* Allowed below discharge

\*\*Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO<sub>3</sub>

Metals Standards based upon a hardness of 396.869129618034 mg/l as CaCO<sub>3</sub> where applicable.

#### Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Aldrin	ug/l		1.5000 ug/l	8.085E-04 lbs/day
Chlordane	0.0043 ug/l	2.318E-06 lbs/day	1.2000 ug/l	6.468E-04 lbs/day
DDT, DDE	0.0010 ug/l	5.390E-07 lbs/day	0.5500 ug/l	2.965E-04 lbs/day
Dieldrin	0.0019 ug/l	1.024E-06 lbs/day	1.2500 ug/l	6.738E-04 lbs/day
Endosulfan	0.0560 ug/l	3.018E-05 lbs/day	0.1100 ug/l	5.929E-05 lbs/day
Endrin	0.0023 ug/l	1.240E-06 lbs/day	0.0900 ug/l	4.851E-05 lbs/day
Guthion			0.0100	
Heptachlor	0.0038 ug/l	2.048E-06 lbs/day	0.2600 ug/l	1.401E-04 lbs/day
Lindane	0.0800 ug/l	4.312E-05 lbs/day	1.0000 ug/l	5.390E-04 lbs/day
Methoxychlor			0.0300	
Mirex			0.0100	
Parathion			0.0400	
PCB's	0.0140 ug/l	7.546E-06 lbs/day	2.0000 ug/l	1.078E-03 lbs/day
Pentachlorophenol	13.0000 ug/l	7.007E-03 lbs/day	20.0000 ug/l	1.078E-02 lbs/day
Toxephene	0.0002 ug/l	1.078E-07 lbs/day	0.7300 ug/l	3.935E-04 lbs/day

#### IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic	N/A		100.0 ug/l	5.39E-02 lbs/day
Boron	N/A		750.0 ug/l	4.04E-01 lbs/day
Cadmium	N/A		10.0 ug/l	5.39E-03 lbs/day
Chromium	N/A		100.0 ug/l	5.39E-02 lbs/day
Copper	N/A		200.0 ug/l	1.08E-01 lbs/day
Lead	N/A		100.0 ug/l	5.39E-02 lbs/day
Selenium	N/A		50.0 ug/l	2.70E-02 lbs/day
TDS	N/A		1200.0 mg/l	3.23E-01 tons/day

#### V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

Metals	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic	N/A		50.0 ug/l	2.70E-02 lbs/day
Barium	N/A		1000.0 ug/l	5.39E-01 lbs/day
Cadmium	N/A		10.0 ug/l	5.39E-03 lbs/day
Chromium	N/A		50.0 ug/l	2.70E-02 lbs/day
Lead	N/A		50.0 ug/l	2.70E-02 lbs/day
Mercury	N/A		2.0 ug/l	1.08E-03 lbs/day
Selenium	N/A		10.0 ug/l	5.39E-03 lbs/day
Silver	N/A		50.0 ug/l	2.70E-02 lbs/day
Fluoride (3)	N/A		1.4 ug/l	7.55E-04 lbs/day
to	N/A		2.4 ug/l	1.29E-03 lbs/day
Nitrates as N	N/A		10.0 ug/l	5.39E-03 lbs/day

Chlorophenoxy Herbicides	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
2,4-D	N/A		100.0 ug/l	5.39E-02 lbs/day
2,4,5-TP	N/A		10.0 ug/l	5.39E-03 lbs/day

Endrin	N/A	0.2 ug/l	1.08E-04 lbs/day
Hexachlorocyclohexane (Lindane)	N/A	4.0 ug/l	2.16E-03 lbs/day
Methoxychlor	N/A	100.0 ug/l	5.39E-02 lbs/day
Toxaphene	N/A	5.0 ug/l	2.70E-03 lbs/day

## VI. Numeric Stream Standards the Protection of Human Health from Water &amp; Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
Antimony	6E+00 ug/l	6E+00 lbs/day	6E+02 ug/l	6.61E+02 lbs/day
Arsenic				
Beryllium				
Cadmium				
Chromium III				
Chromium VI				
Copper	1E+03 ug/l	1E+03 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
Lead				
Mercury				
Nickel	1E+02 ug/l	1E+02 lbs/day	5E+03 ug/l	4.75E+03 lbs/day
Selenium			4E+03 ug/l	4.34E+03 lbs/day
Silver				
Thallium	2E-01 ug/l	2E-01 lbs/day	5E-01 ug/l	4.81E-01 lbs/day
Zinc	7E+03 ug/l	8E+03 lbs/day	3E+04 ug/l	2.68E+04 lbs/day
Cyanide	1E+02 ug/l	1E+02 lbs/day	1E+02 ug/l	1.44E+02 lbs/day
Asbestos				
2,3,7,8-TCDD Dioxin	5E-09			
Acrolein	2E+02 ug/l	2E+02 lbs/day	3E+02 ug/l	2.96E+02 lbs/day
Acrylonitrile	5E-02 ug/l	5E-02 lbs/day	3E-01 ug/l	2.57E-01 lbs/day
Alachlor	2E+00 ug/l	2E+00 lbs/day		
Atrazine	3E+00 ug/l	3E+00 lbs/day		
Benzene	2E+00 ug/l	2E+00 lbs/day	5E+01 ug/l	5.26E+01 lbs/day
Bromoform	4E+00 ug/l	4E+00 lbs/day	1E+02 ug/l	1.44E+02 lbs/day
Carbofuran	4E+01 ug/l	4E+01 lbs/day		
Carbon Tetrachloride	2E-01 ug/l	2E-01 lbs/day	2E+00 ug/l	1.65E+00 lbs/day
Chlorobenzene	1E+02 ug/l	1E+02 lbs/day	2E+03 ug/l	1.65E+03 lbs/day
Chlorodibromomethane	4E-01 ug/l	4E-01 lbs/day	1E+01 ug/l	1.34E+01 lbs/day
Chloroethane				
2-Chloroethylvinyl Ether				
Chloroform	6E+00 ug/l	6E+00 lbs/day	5E+02 ug/l	4.85E+02 lbs/day
Dalapon	2E+02 ug/l	2E+02 lbs/day		
Di(2ethylhexyl)adipate	4E+02 ug/l	4E+02 lbs/day		
Dibromochloropropane	2E-01 ug/l	2E-01 lbs/day		
Dichlorobromomethane	6E-01 ug/l	6E-01 lbs/day	2E+01 ug/l	1.75E+01 lbs/day
1,1-Dichloroethane				
1,2-Dichloroethane	4E-01 ug/l	4E-01 lbs/day	4E+01 ug/l	3.82E+01 lbs/day
1,1-Dichloroethylene	7E+00 ug/l	7E+00 lbs/day	7E+03 ug/l	7.33E+03 lbs/day
Dichloroethylene (cis-1,2	7E+01 ug/l	7E+01 lbs/day	0E+00 ug/l	
Dinoseb	7E+00 ug/l	7E+00 lbs/day	0E+00 ug/l	
Diquat	2E+01 ug/l	2E+01 lbs/day	0E+00 ug/l	
1,2-Dichloropropane	5E-01 ug/l	5E-01 lbs/day	2E+01 ug/l	1.55E+01 lbs/day
1,3-Dichloropropene	3E-01 ug/l	3E-01 lbs/day	2E+01 ug/l	2.17E+01 lbs/day
Endothall	1E+02 ug/l	1E+02 lbs/day		
Ethylbenzene	5E+02 ug/l	5E+02 lbs/day	2E+03 ug/l	2.16E+03 lbs/day
Ethylene Dibromide	5E-02 ug/l	5E-02 lbs/day		
Glyphosate	7E+02 ug/l	7E+02 lbs/day		
Haloacetic acids	6E+01 ug/l	6E+01 lbs/day		
Methyl Bromide	5E+01 ug/l	5E+01 lbs/day	2E+03 ug/l	1.55E+03 lbs/day

Methyl Chloride				
Methylene Chloride	5E+00 ug/l	5E+00 lbs/day	6E+02 ug/l	6.09E+02 lbs/day
Ocamyl (vidate)	2E+02 ug/l	2E+02 lbs/day		
Picloram	5E+02 ug/l	5E+02 lbs/day		
Simazine	4E+00 ug/l	4E+00 lbs/day		
Styrene	1E+02 ug/l	1E+02 lbs/day		
1,1,2,2-Tetrachloroethane	2E-01 ug/l	2E-01 lbs/day	4E+00 ug/l	4.13E+00 lbs/day
Tetrachloroethylene	7E-01 ug/l	7E-01 lbs/day	3E+00 ug/l	3.40E+00 lbs/day
Toluene	1E+03 ug/l	1E+03 lbs/day	2E+04 ug/l	1.55E+04 lbs/day
1,2 -Trans-Dichloroethyle	1E+02 ug/l	1E+02 lbs/day	1E+04 ug/l	1.03E+04 lbs/day
1,1,1-Trichloroethane	2E+02 ug/l	2E+02 lbs/day		
1,1,2-Trichloroethane	6E-01 ug/l	6E-01 lbs/day	2E+01 ug/l	1.65E+01 lbs/day
Trichloroethylene	3E+00 ug/l	3E+00 lbs/day	3E+01 ug/l	3.09E+01 lbs/day
Vinyl Chloride	3E-02 ug/l	3E-02 lbs/day	2E+00 ug/l	2.48E+00 lbs/day
Xylenes	1E+04 ug/l	1E+04 lbs/day		
2-Chlorophenol	8E+01 ug/l	8E+01 lbs/day	2E+02 ug/l	1.54E+02 lbs/day
2,4-Dichlorophenol	8E+01 ug/l	8E+01 lbs/day	3E+02 ug/l	2.98E+02 lbs/day
2,4-Dimethylphenol	4E+02 ug/l	4E+02 lbs/day	9E+02 ug/l	8.71E+02 lbs/day
2-Methyl-4,6-Dinitrophenol	1E+01 ug/l	1E+01 lbs/day	3E+02 ug/l	2.89E+02 lbs/day
2,4-Dinitrophenol	7E+01 ug/l	7E+01 lbs/day	5E+03 ug/l	5.47E+03 lbs/day
2-Nitrophenol				
4-Nitrophenol				
3-Methyl-4-Chlorophenol				
Penetachlorophenol	3E-01 ug/l	3E-01 lbs/day	3E+00 ug/l	3.09E+00 lbs/day
Phenol	2E+04 ug/l	2E+04 lbs/day	2E+06 ug/l	1.75E+06 lbs/day
2,4,6-Trichlorophenol	1E+00 ug/l	1E+00 lbs/day	2E+00 ug/l	2.45E+00 lbs/day
Acenaphthene	7E+02 ug/l	7E+02 lbs/day	1E+03 ug/l	1.01E+03 lbs/day
Acenaphthylene				
Anthracene	8E+03 ug/l	8E+03 lbs/day	4E+04 ug/l	4.12E+04 lbs/day
Benzidine	9E-05 ug/l	9E-05 lbs/day	2E-04 ug/l	2.05E-04 lbs/day
Benzo(a)Anthracene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.85E-02 lbs/day
Benzo(a)Pyrene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.85E-02 lbs/day
Benzob(Fluoranthene)	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.85E-02 lbs/day
BenzoghiPerylene	0E+00 ug/l	0E+00 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
Benzok(Fluoranthene)	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.85E-02 lbs/day
Bis(2-Chloroethoxy)Methane	0E+00 ug/l	0E+00 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
Bis(2-Chloroethyl)Ether	3E-02 ug/l	3E-02 lbs/day	5E-01 ug/l	5.47E-01 lbs/day
Bis(2-Chloroisopropyl)Ether	1E+03 ug/l	1E+03 lbs/day	7E+04 ug/l	6.71E+04 lbs/day
Bis(2-Ethylhexyl)Phthalate	1E+00 ug/l	1E+00 lbs/day	2E+00 ug/l	2.25E+00 lbs/day
4-Bromophenyl Phenyl Ether	0E+00			
Butylbenzyl Phthalate	2E+03 ug/l	2E+03 lbs/day	2E+03 ug/l	1.94E+03 lbs/day
2-Chloronaphthalene	1E+03 ug/l	1E+03 lbs/day	2E+03 ug/l	1.64E+03 lbs/day
4-Chlorophenyl Phenyl Ether				
Chrysene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.85E-02 lbs/day
Dibenz(a,h)Anthracene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.85E-02 lbs/day
1,2-Dichlorobenzene	4E+02 ug/l	4E+02 lbs/day	1E+03 ug/l	1.34E+03 lbs/day
1,3-Dichlorobenzene	3E+02 ug/l	3E+02 lbs/day	1E+03 ug/l	9.86E+02 lbs/day
1,4-Dichlorobenzene	6E+01 ug/l	6E+01 lbs/day	2E+02 ug/l	1.95E+02 lbs/day
3,3-Dichlorobenzidine	2E-02 ug/l	2E-02 lbs/day	3E-02 ug/l	2.86E-02 lbs/day
Diethyl Phthalate	2E+03 ug/l	2E+03 lbs/day	4E+04 ug/l	4.54E+04 lbs/day
Dimethyl Phthalate	3E+05 ug/l	3E+05 lbs/day	1E+06 ug/l	1.13E+06 lbs/day
Di-n-Butyl Phthalate	2E+03 ug/l	2E+03 lbs/day	5E+03 ug/l	4.61E+03 lbs/day
2,4-Dinitrotoluene	1E-01 ug/l	1E-01 lbs/day	3E+00 ug/l	3.51E+00 lbs/day
2,6-Dinitrotoluene				
Di-n-Octyl Phthalate				
1,2-Diphenylhydrazine	4E-02 ug/l	4E-02 lbs/day	2E-01 ug/l	2.06E-01 lbs/day
Fluoranthene	1E+02 ug/l	1E+02 lbs/day		
Fluorene	1E+03 ug/l	1E+03 lbs/day	5E+03 ug/l	5.45E+03 lbs/day
Hexachlorobenzene	3E-04 ug/l	3E-04 lbs/day	3E-04 ug/l	2.95E-04 lbs/day
Hexachlorobutenedine	4E-01 ug/l	4E-01 lbs/day	2E+01 ug/l	1.86E+01 lbs/day

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Hexachloroethane	1E+00 ug/l	1E+00 lbs/day	3E+00 ug/l	3.38E+00 lbs/day
Hexachlorocyclopentadiene	4E+01 ug/l	4E+01 lbs/day	1E+03 ug/l	1.13E+03 lbs/day
Ideno 1,2,3-cdPyrene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.85E-02 lbs/day
Isophorone	4E+01 ug/l	4E+01 lbs/day	1E+03 ug/l	9.90E+02 lbs/day
Naphthalene			ug/l	
Nitrobenzene	2E+01 ug/l	2E+01 lbs/day	7E+02 ug/l	7.12E+02 lbs/day
N-Nitrosodimethylamine	7E-04 ug/l	7E-04 lbs/day	3E+00 ug/l	3.10E+00 lbs/day
N-Nitrosodi-n-Propylamine	5E-03 ug/l	5E-03 lbs/day	5E-01 ug/l	5.26E-01 lbs/day
N-Nitrosodiphenylamine	3E+00 ug/l	3E+00 lbs/day	6E+00 ug/l	6.14E+00 lbs/day
Phenanthrene				
Pyrene	8E+02 ug/l	8E+02 lbs/day	4E+03 ug/l	4.12E+03 lbs/day
1,2,4-Trichlorobenzene	4E+01 ug/l	4E+01 lbs/day	7E+01 ug/l	7.17E+01 lbs/day
Aldrin	5E-05 ug/l	5E-05 lbs/day	5E-05 ug/l	5.08E-05 lbs/day
alpha-BHC	3E-03 ug/l	3E-03 lbs/day	5E-03 ug/l	5.02E-03 lbs/day
beta-BHC	9E-03 ug/l	9E-03 lbs/day	2E-02 ug/l	1.74E-02 lbs/day
gamma-BHC (Lindane)	2E-01 ug/l	2E-01 lbs/day	2E+00 ug/l	1.85E+00 lbs/day
delta-BHC	0E+00 ug/l	0E+00 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
Chlordane	8E-04 ug/l	8E-04 lbs/day	8E-04 ug/l	8.23E-04 lbs/day
4,4-DDT	2E-04 ug/l	2E-04 lbs/day	2E-04 ug/l	2.24E-04 lbs/day
4,4-DDE	2E-04 ug/l	2E-04 lbs/day	2E-04 ug/l	2.24E-04 lbs/day
4,4-DDD	3E-04 ug/l	3E-04 lbs/day	3E-04 ug/l	3.15E-04 lbs/day
Dieldrin	5E-05 ug/l	5E-05 lbs/day	5E-05 ug/l	5.49E-05 lbs/day
alpha-Endosulfan	6E+01 ug/l	6E+01 lbs/day	9E+01 ug/l	9.09E+01 lbs/day
beta-Endosulfan	6E+01 ug/l	6E+01 lbs/day	9E+01 ug/l	9.09E+01 lbs/day
Endosulfan Sulfate	6E+01 ug/l	6E+01 lbs/day	9E+01 ug/l	9.09E+01 lbs/day
Endrin	6E-02 ug/l	6E-02 lbs/day	6E-02 ug/l	6.10E-02 lbs/day
Endrin Aldehyde	3E-02 ug/l	3E-02 lbs/day	3E-01 ug/l	3.09E-01 lbs/day
Heptachlor	8E-05 ug/l	8E-05 lbs/day	8E-05 ug/l	8.03E-05 lbs/day
Heptachlor Epoxide	4E-05 ug/l	4E-05 lbs/day	4E-05 ug/l	3.96E-05 lbs/day
Polychlorinated Biphenyls	6E-05 ug/l	7E-05 lbs/day	6E-05 ug/l	6.50E-05 lbs/day
PCB's				
Toxaphene	3E-04 ug/l	3E-04 lbs/day	3E-04 ug/l	0.00E+00 lbs/day

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

## VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon QUAL2kw EPA and the University of Washington.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. QUAL2kw default values or as adjusted by user, as noted.

## VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

### Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

### Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

#### Current Headwater/Upstream Information

	Stream Critical							
	Low Flow	Temp.	pH	T-NH4	BOD5	DO	TRC	TDS
	cfs	Deg. C		mg/l as N	mg/l	mg/l	mg/l	mg/l
Summer	0.100	15.1	8.3	0.05	0.10	9.10	0.00	1875.0
Fall	0.000	0.0	0.0	0.00	0.00	0.00	0.00	0.0
Winter	0.120	8.0	8.2	0.31	0.10	10.70	0.00	2335.0
Spring	0.000	0.0	0.0	0.00	0.00	0.00	0.00	0.0
Dissolved	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb

Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	15.00	2.50	0.38	133.25	5.50	5.59	0.00	9.20
Dissolved	Hg	Ni	Se	Ag	Zn	Boron		
Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	0.0060	3.75	1.30	1.00	41.00	375.0	* 1/2 MDL	

**Projected Discharge Information [See page 5 for additional information]**

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	2.00	23.60	3,000.00	25.01
Fall	-	-	-	-
Winter	2.00	15.50	3,600.00	30.02
Spring	-	-	-	-

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

**IX. Effluent Limitations**

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

**Effluent Limitation for Flow based upon Water Quality Standards**

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average		
Summer	2.00 MGD		3.094 cfs
Fall	- MGD		0.000 cfs
Winter	2.00 MGD		3.094 cfs
Spring	- MGD		0.000 cfs

**Flow Requirement or Loading Requirement**

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 2 MGD. If the discharger is allowed to have a flow greater than 2 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

**Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy**

Effluent Toxicity will not occur in downstream segments if the values below are met.

WET Requirements	LC50 >	EOP Effluent	[Acute]
System is Totally Mixed	IC25 >	96.9% Effluent	[Chronic]

### Effluent Limitation for Biological Oxygen Demand (BOD<sub>5</sub>) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD<sub>5</sub> limitation as follows:

Season	Concentration	
Summer	25.00 mg/l as CBOD <sub>5</sub>	416.92 lbs/day
Fall	- mg/l as CBOD <sub>5</sub>	- lbs/day
Winter	25.00 mg/l as CBOD <sub>5</sub>	416.92 lbs/day
Spring	- mg/l as CBOD <sub>5</sub>	- lbs/day

### Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	Concentration	Load
Summer	4.00 mg/l	66.71 lbs/day
Fall	- mg/l	- lbs/day
Winter	4.00 mg/l	66.71 lbs/day
Spring	- mg/l	- lbs/day

### Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	3.00 mg/l as N	50.03 lbs/day
	1 Hour Avg. - Acute	14.74 mg/l as N	245.79 lbs/day
Fall	4 Day Avg. - Chronic	- mg/l as N	- lbs/day
	1 Hour Avg. - Acute	- mg/l as N	- lbs/day
Winter	4 Day Avg. - Chronic	4.50 mg/l as N	75.04 lbs/day
	1 Hour Avg. - Acute	22.11 mg/l as N	368.69 lbs/day
Spring	4 Day Avg. - Chronic	- mg/l as N	- lbs/day
	1 Hour Avg. - Acute	- mg/l as N	- lbs/day

### Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	0.25 mg/l	4.17 lbs/day
	1 Hour Avg. - Acute	0.43 mg/l	7.20 lbs/day
Fall	4 Day Avg. - Chronic	- mg/l	- lbs/day
	1 Hour Avg. - Acute	- mg/l	- lbs/day
Winter	4 Day Avg. - Chronic	0.15 mg/l	2.50 lbs/day
	1 Hour Avg. - Acute	0.26 mg/l	4.32 lbs/day
Spring	4 Day Avg. - Chronic	- mg/l	- lbs/day
	1 Hour Avg. - Acute	- mg/l	- lbs/day

### Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season	Concentration	Load
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Summer	Maximum, Acute	3,000.0 mg/l	50,030 tons/day
Fall	Maximum, Acute	- mg/l	- tons/day
Winter	Maximum, Acute	3,600.0 mg/l	60,036 tons/day
Spring	Maximum, Acute	- mg/l	- tons/day

Colorado Salinity Form Limits      Determined by Permitting Section

#### Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	Maximum	23.60 Deg. C.	74.5 Deg. F
Fall	Maximum	- Deg. C.	- Deg. F
Winter	Maximum	15.50 Deg. C.	59.9 Deg. F
Spring	Maximum	- Deg. C.	- Deg. F

#### Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segments if the values below are met.

WET Requirements	LC50 >	EOP Effluent	[Acute]
	IC25 >	96.9% Effluent	[Chronic]

#### Effluent Limitations for Organics [Pesticides] Based upon Water Quality Standards [Class 3]

In-stream criteria of downstream segments for Organics [Pesticides]  
will be met with an effluent limit as follows:

	4 Day Average		1 Hour Average		
	Concentration	Load	Concentration	Load	
Aldrin			1.5E+00 ug/l		8.15E-01 lbs/day
Chlordane	4.37E-03 ug/l	2.36E-03 lbs/day	1.2E+00 ug/l		6.57E-01 lbs/day
DDT, DDE	1.02E-03 ug/l	5.48E-04 lbs/day	5.6E-01 ug/l		3.01E-01 lbs/day
Dieldrin	1.93E-03 ug/l	1.04E-03 lbs/day	1.3E+00 ug/l		6.85E-01 lbs/day
Endosulfan	5.69E-02 ug/l	3.07E-02 lbs/day	1.1E-01 ug/l		6.00E-02 lbs/day
Endrin	2.34E-03 ug/l	1.26E-03 lbs/day	9.1E-02 ug/l		4.93E-02 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l		5.43E-03 lbs/day
Heptachlor	3.86E-03 ug/l	2.08E-03 lbs/day	2.6E-01 ug/l		1.42E-01 lbs/day
Lindane	8.13E-02 ug/l	4.38E-02 lbs/day	1.0E+00 ug/l		5.47E-01 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02 ug/l		1.63E-02 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l		5.43E-03 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02 ug/l		2.17E-02 lbs/day
PCB's	1.42E-02 ug/l	7.67E-03 lbs/day	2.0E+00 ug/l		1.10E+00 lbs/day
Pentachlorophenol	1.32E+01 ug/l	7.12E+00 lbs/day	2.0E+01 ug/l		1.09E+01 lbs/day
Toxephene	2.03E-04 ug/l	1.10E-04 lbs/day	7.4E-01 ug/l		4.00E-01 lbs/day

#### Effluent Limitations for E. coli Based upon Water Quality Standards [Class 2]

E. coli      126.0 organisms per 100 ml

#### Effluent Targets for Pollution Indicators Based upon Water Quality Standards

In-stream criteria of downstream segments for Pollution Indicators  
will be met with an effluent limit as follows:



	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.8 pCi/L	0.00
BOD (mg/l)	5.1 mg/l	84.7 lbs/day
Nitrate as N (mg/l)	4.1 mg/l	67.8 lbs/day
Total Phosphorus as P	0.1 mg/l	0.0 lbs/day

Note: Pollution indicator targets are for information purposes only.

#### Effluent Limitations for Protection of Human Health [Toxics Rule]

Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics]  
will be met with an effluent limit as follows:

Toxic Organics	Effluent Limitation (30 Day Avg.) Class 1C	Maximum Concentration	
		Concentra Effluent Limit (30 Day Avg.) Class 3	Load
Antimony	5.690E+00	6.606E+02	
Arsenic			
Beryllium			
Cadmium			
Chromium III			
Chromium VI			
Copper	1.342E+03		
Lead			
Mercury			
Nickel	1.031E+02	4.75E+03	
Selenium		4.34E+03	
Silver		0.00E+00	
Thallium	2.439E-01	4.81E-01	
Zinc	7.638E+03	2.68E+04	
Cyanide	1.444E+02	1.44E+02	
Asbestos	7.000E+06		
2,3,7,8-TCDD Dioxin		5.18E-09	
Acrolein	1.931E+02	2.96E+02	
Acrylonitrile	5.182E-02	2.57E-01	
Alachlor	2.032E+00	0.00E+00	
Atrazine	3.048E+00	0.00E+00	
Benzene	2.236E+00	5.26E+01	
Bromoform	4.369E+00	1.44E+02	
Carbofuran	4.065E+01		
Carbon Tetrachloride	2.337E-01	1.65E+00	
Chlorobenzene	1.016E+02	1.65E+03	
Chlorodibromomethane	4.065E-01	1.34E+01	
Chloroethane			
2-Chloroethylvinyl Ether			
Chloroform	5.792E+00	4.85E+02	
Dalapon	2.032E+02		
Di(2ethylhexyl)adipate	4.065E+02		
Dibromochloropropane	2.032E-01		
Dichlorobromomethane	5.589E-01	1.75E+01	
1,1-Dichloroethane		0.00E+00	
1,2-Dichloroethane	3.861E-01	3.82E+01	
1,1-Dichloroethylene	7.113E+00	7.33E+03	
Dichloroethylene (cis-1,2	7.113E+01	0.00E+00	

Dinose	7.113E+00	0.00E+00
Diquat	2.032E+01	0.00E+00
1,2-Dichloropropane	5.081E-01	1.55E+01
1,3-Dichloropropene	3.455E-01	2.17E+01
Endothall	1.016E+02	0.00E+00
Ethylbenzene	5.386E+02	2.16E+03
Ethylene Dibromide	5.081E-02	0.00E+00
Glyphosate	7.113E+02	0.00E+00
Haloacetic acids	6.097E+01	0.00E+00
Methyl Bromide	4.776E+01	1.55E+03
Methyl Chloride	0.000E+00	
Methylene Chloride	4.674E+00	6.09E+02
Ocamyl (vidate)	2.032E+02	
Picloram	5.081E+02	
Simazine	4.065E+00	
Styrene	1.016E+02	
1,1,2,2-Tetrachloroethane	1.727E-01	4.13E+00
Tetrachloroethylene	7.012E-01	3.40E+00
Toluene	1.016E+03	1.55E+04
1,2 -Trans-Dichloroethyle	1.016E+02	1.03E+04
1,1,1-Trichloroethane	2.032E+02	0.00E+00
1,1,2-Trichloroethane	5.995E-01	1.65E+01
Trichloroethylene	2.540E+00	3.09E+01
Vinyl Chloride	2.540E-02	2.48E+00
Xylenes	1.016E+04	
2-Chlorophenol	8.231E+01	1.54E+02
2,4-Dichlorophenol	7.824E+01	2.98E+02
2,4-Dimethylphenol	3.861E+02	8.71E+02
2-Methyl-4,6-Dinitrophenol	1.321E+01	2.89E+02
2,4-Dinitrophenol	7.012E+01	5.47E+03
2-Nitrophenol		
4-Nitrophenol		
3-Methyl-4-Chlorophenol		
Penetachlorophenol	2.744E-01	3.09E+00
Phenol	2.134E+04	1.75E+06
2,4,6-Trichlorophenol	1.423E+00	2.45E+00
Acenaphthene	6.808E+02	1.01E+03
Acenaphthylene	0.000E+00	0.00E+00
Anthracene	8.434E+03	4.12E+04
Benzidine	8.739E-05	2.05E-04
Benzo(a)Anthracene	3.861E-03	1.85E-02
Benzo(a)Pyrene	3.861E-03	1.85E-02
Benzob(Fluoranthene	3.861E-03	1.85E-02
BenzoghiPerylene		0.00E+00
BenzokFluoranthene	3.861E-03	1.85E-02
Bis(2-Chloroethoxy)Methane		0.00E+00
Bis(2-Chloroethyl)Ether	3.048E-02	5.47E-01
Bis(2-Chloroisopropyl)Ether	1.423E+03	6.71E+04
Bis(2-Ethylhexyl)Phthalate	1.219E+00	2.25E+00
4-Bromophenyl Phenyl Ether		0.00E+00
Butylbenzyl Phthalate	1.524E+03	1.94E+03
2-Chloronaphthalene	1.016E+03	1.64E+03
4-Chlorophenyl Phenyl Ether		
Chrysene	3.861E-03	1.85E-02
Dibenzo(a, h)Anthracene	3.861E-03	1.85E-02
1,2-Dichlorobenzene	4.268E+02	1.34E+03
1,3-Dichlorobenzene	3.252E+02	9.86E+02
1,4-Dichlorobenzene	6.402E+01	1.95E+02
3,3-Dichlorobenzidine	2.134E-02	2.86E-02
Diethyl Phthalate	1.727E+03	4.54E+04

Dimethyl Phthalate	2.744E+05	1.13E+06
Di-n-Butyl Phthalate	2.032E+03	4.61E+03
2,4-Dinitrotoluene	1.118E-01	3.51E+00
2,6-Dinitrotoluene		0.00E+00
Di-n-Octyl Phthalate		0.00E+00
1,2-Diphenylhydrazine	3.658E-02	2.06E-01
Fluoranthene	1.321E+02	
Fluorene	1.118E+03	5.45E+03
Hexachlorobenzene	2.845E-04	2.95E-04
Hexachlorobutenedine	4.471E-01	1.86E+01
Hexachloroethane	1.423E+00	3.38E+00
Hexachlorocyclopentadiene	4.065E+01	1.13E+03
Ideno 1,2,3-cdPyrene	3.861E-03	1.85E-02
Isophorone	3.557E+01	9.90E+02
Naphthalene		
Nitrobenzene	1.727E+01	7.12E+02
N-Nitrosodimethylamine	7.012E-04	3.10E+00
N-Nitrosodi-n-Propylamine	5.081E-03	5.26E-01
N-Nitrosodiphenylamine	3.353E+00	6.14E+00
Phenanthrene		
Pyrene	8.434E+02	4.12E+03
1,2,4-Trichlorobenzene	3.557E+01	7.17E+01
Aldrin	4.979E-05	5.08E-05
alpha-BHC	2.642E-03	5.02E-03
beta-BHC	9.247E-03	1.74E-02
gamma-BHC (Lindane)	2.032E-01	1.85E+00
delta-BHC		0.00E+00
Chlordane	8.129E-04	8.23E-04
4,4-DDT	2.236E-04	2.24E-04
4,4-DDE	2.236E-04	2.24E-04
4,4-DDD	3.150E-04	3.15E-04
Dieldrin	5.284E-05	5.49E-05
alpha-Endosulfan	6.300E+01	9.09E+01
beta-Endosulfan	6.300E+01	9.09E+01
Endosulfan Sulfate	6.300E+01	9.09E+01
Endrin	5.995E-02	6.10E-02
Endrin Aldehyde	2.947E-02	3.09E-01
Heptachlor	8.028E-05	8.03E-05
Heptachlor Epoxide	3.963E-05	3.96E-05
PCBs	6.503E-05	6.50E-05
Toxaphene	2.845E-04	

**Metals Effluent Limitations for Protection of All Beneficial Uses  
Based upon Water Quality Standards and Toxics Rule**

	Class 3: Chronic Aquatic Wildlife ug/l	Class 3: Acute Aquatic Wildlife ug/l	Class 1C: Drinking Water Supply	Class 1C: Acute Toxics Drinking Water Source ug/l	Class 3: Acute Toxics Drinking & Consumpt ion Criteria ug/l	Class 4: Acute Agricultur al ug/l	Acute Most Stringent ug/l
Aluminum	N/A	761.9					761.9
Antimony				5.7			5.7
Arsenic	196.1	345.5	51.5			103.2	51.5
Asbestos				7.00E+06			7000000.0
Barium			1016.2				1016.2
Beryllium							0.0
Cadmium	0.8	8.8	10.3			10.3	0.8
Chromium (III)	270.8	5663.6	47.3				47.3
Chromium (VI)	11.18	16.2				98.9	11.2
Copper	31.1	52.0		1341.8		206.3	31.1
Cyanide	5.3	22.3		144.4			5.3
Iron		1016.2					1016.2
Lead	18.7	479.6	51.3			102.9	18.7
Mercury	0.012	2.44	2.06				0.0
Nickel	172.7	1530.1		103.1			103.1
Selenium	4.7	20.3	10.3		4335.5	51.6	4.7
Silver		41.2	51.6				41.2
Thallium							0.0
Zinc	396.4	390.8			26839.0		390.8
Boron						762.1	762.1

**Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]**

[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	761.9	N/A	
Antimony	5.69		
Arsenic	51.5	196.1	Acute Controls
Asbestos	7.00E+06		
Barium	1016.2		
Beryllium			
Cadmium	0.8	0.8	
Chromium (III)	47.3	271	Acute Controls
Chromium (VI)	11.2	11.2	
Copper	31.1	31.1	
Cyanide	5.3	5.3	
Iron	1016.2		
Lead	18.7	18.7	
Mercury	0.012	0.012	
Nickel	103.1	173	Acute Controls
Selenium	4.7	4.7	
Silver	41.2	N/A	
Thallium	0.0		
Zinc	390.8	396.4	Acute Controls
Boron	762.12		

Other Effluent Limitations are based upon R317-1.

#### **X. Antidegradation Considerations**

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an **Antidegradation Level II Review is NOT Required.**

#### **XI. Colorado River Salinity Forum Considerations**

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

#### **XII. Summary Comments**

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important downstream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

#### **XIII. Notice of UPDES Requirement**

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

#### **XIV. Special Considerations**

EA Miller discharges to a tributary of Spring Creek which is listed on the Utah 303(d) listed for total phosphorous (TP), ammonia and dissolved oxygen (DO). A TMDL was completed for Spring Creek on September 9th, 2002. The TMDL set the load allocation for EA Miller at 170 kg/yr TP based on the anticipated capacity of the plant (2 mgd) and an average total phosphorus concentration of 0.10 mg/l (30 day average).

Prepared by:  
David Wham  
Utah Division of Water Quality

File Name: EA Miller &amp; Hyrum WWTP\_Irrigation\_limits.xls

**Level I Antidegradation Review for: EA Miller**

Level II Antidegradation Review is NOT required. Basic permit renewal. No increase in load or concentration over last issued permit.

**APPENDIX - Coefficients and Other Model Information**

<i>Parameter</i>	<i>Value</i>	<i>Units</i>
<b><i>Stoichiometry:</i></b>		
Carbon	40	gC
Nitrogen	7.2	gN
Phosphorus	1	gP
Dry weight	100	gD
Chlorophyll	1	gA
<b><i>Inorganic suspended solids:</i></b>		
Settling velocity	0.06128	m/d
<b><i>Oxygen:</i></b>		
Reaeration model	Internal	
Temp correction	1.024	
Reaeration wind effect	None	
O2 for carbon oxidation	2.69	gO2/gC
O2 for NH4 nitrification	4.57	gO2/gN
Oxygen inhib model CBOD oxidation	Exponential	
Oxygen inhib parameter CBOD oxidation	0.60	L/mgO2
Oxygen inhib model nitrification	Exponential	
Oxygen inhib parameter nitrification	0.60	L/mgO2
Oxygen enhance model denitrification	Exponential	
Oxygen enhance parameter denitrification	0.60	L/mgO2
Oxygen inhib model phyto resp	Exponential	
Oxygen inhib parameter phyto resp	0.60	L/mgO2
Oxygen enhance model bot alg resp	Exponential	
Oxygen enhance parameter bot alg resp	0.60	L/mgO2
<b><i>Slow CBOD:</i></b>		
Hydrolysis rate	1.93545	/d
Temp correction	1.047	
Oxidation rate	1.18385	/d
Temp correction	1.047	
<b><i>Fast CBOD:</i></b>		
Oxidation rate	0.5447	/d
Temp correction	1.047	
<b><i>Organic N:</i></b>		
Hydrolysis	0.8365	/d
Temp correction	1.07	
Settling velocity	0.24964	m/d
<b><i>Ammonium:</i></b>		
Nitrification	2.1554	/d
Temp correction	1.07	
<b><i>Nitrate:</i></b>		
Denitrification	1.02986	/d
Temp correction	1.07	
Sed denitrification transfer coeff	0.05126	m/d
Temp correction	1.07	

<b>Organic P:</b>		
Hydrolysis	3.4361	/d
Temp correction	1.07	
Settling velocity	0.62926	m/d
<b>Inorganic P:</b>		
Settling velocity	0.01384	m/d
Sed P oxygen attenuation half sat constant	1.69154	mgO2/L
<b>Phytoplankton:</b>		
Max Growth rate	2.5	/d
Temp correction	1.07	
Respiration rate	0.1	/d
Temp correction	1.07	
Death rate	0	/d
Temp correction	1	
Nitrogen half sat constant	15	ugN/L
Phosphorus half sat constant	2	ugP/L
Inorganic carbon half sat constant	1.30E-05	moles/L
Phytoplankton use HCO3- as substrate	Yes	
Light model	Half saturation	
Light constant	57.6	langleys/d
Ammonia preference	25	ugN/L
Settling velocity	0.15	m/d
<b>Bottom Plants:</b>		
Growth model	Zero-order	
Max Growth rate	49.3845	gD/m2/d or /d
Temp correction	1.07	
First-order model carrying capacity	100	gD/m2
Basal respiration rate	0.48434	/d
Photo-respiration rate parameter	0	unitless
Temp correction	1.07	
Excretion rate	0.46367	/d
Temp correction	1.07	
Death rate	0.40579	/d
Temp correction	1.07	
External nitrogen half sat constant	163.368	ugN/L
External phosphorus half sat constant	47.556	ugP/L
Inorganic carbon half sat constant	1.05E-05	moles/L
Bottom algae use HCO3- as substrate	Yes	
Light model	Half saturation	
Light constant	2.09098	langleys/d
Ammonia preference	1.48807	ugN/L
Subsistence quota for nitrogen	29.957365	mgN/gD
Subsistence quota for phosphorus	0.3928168	mgP/gD
Maximum uptake rate for nitrogen	446.5885	mgN/gD/d
Maximum uptake rate for phosphorus	114.4235	mgP/gD/d
Internal nitrogen half sat ratio	2.856177	
Internal phosphorus half sat ratio	1.752547	
Nitrogen uptake water column fraction	1	
Phosphorus uptake water column fraction	1	
<b>Detritus (POM):</b>		
Dissolution rate	2.7754	/d
Temp correction	1.07	
Settling velocity	3.89475	m/d
<b>Pathogens:</b>		
Decay rate	0.8	/d
Temp correction	1.07	
Settling velocity	1	m/d
alpha constant for light mortality	1	/d per ly/hr
<b>pH:</b>		
Partial pressure of carbon dioxide	347	ppm

**Hyporheic metabolism****Model for biofilm oxidation of fast CBOD**

Max biofilm growth rate

**Zero-order****5** gO<sub>2</sub>/m<sup>2</sup>/d or /d

Temp correction

**1.047**

Fast CBOD half-saturation

**0.5**mgO<sub>2</sub>/L

Oxygen inhib model

**Exponential**

Oxygen inhib parameter

**0.60**L/mgO<sub>2</sub>

Respiration rate

**0.2**

/d

Temp correction

**1.07**

Death rate

**0.05**

/d

Temp correction

**1.07**

External nitrogen half sat constant

**15**

ugN/L

External phosphorus half sat constant

**2**

ugP/L

Ammonia preference

**25**

ugN/L

First-order model carrying capacity

**100.0**gD/m<sup>2</sup>**Generic constituent**

Decay rate

**30.0**

/d

Temp correction

**1.1**

Settling velocity

**1.0**

m/d

**Atmospheric Inputs:**

	Summer	Summer	Fall	Winter	Spring
Air Temperature, F	65.0	65.0	45.0	30.0	45.0
Dew Point, Temp., F	44.0	44.0	35.0	32.0	35.0
Wind, ft./sec. @ 21 ft.	2.0	2.0	2.0	2.0	2.0
Cloud Cover, %	10.0%	10.0%	10.0%	10.0%	10.0%
Shade, %	5.0%	5.0%	5.0%	5.0%	5.0%

**Other Inputs:**

Manning Coefficient	0.04	Default
Side Slope	10.0%	
Bottom Algae Coverage	50.0%	



**WASTELOAD ANALYSIS [WLA]  
Addendum: Statement of Basis  
SUMMARY**

Date: 9/14/2012

Time: 4:37 PM

**Discharging Facility:** EA Miller

UPDES No: UT00000281  
Current Flow: 2.00 MGD  
Design Flow: 2.00 MGD

**Non-Irrigation Season (October - March)** 

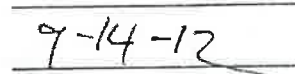

**Receiving Water:** Ditch to So. Fork of Spring Creek  
**Stream Classification:** 2B, 3A, 3B, 4      **Controlling:** 3A  
**Stream Flows [cfs]:**  
0.10 Summer (July-Sept)      Critical Low Flow  
- Fall (Oct-Dec)      Critical Low Flow  
0.12 Winter (Jan-Mar)      Critical Low Flow  
- Spring (Apr-June)      Critical Low Flow

**Stream TDS Values**  
[mg/l as CaCO<sub>3</sub>]  
- Summer (July-Sept)  
- Fall (Oct-Dec)  
- Winter (Jan-Mar)  
- Spring (Apr-June)

<b>Parameter:</b>	<b>Effluent Limits:</b>	<b>WQ Standard:</b>
Winter Flow, MGD:	2.00 MGD	
BOD, mg/l:	25.00 Winter	5.0 Indicator
Dissolved Oxygen, mg/l:	4.00 Winter	6.5 30 Day Average
NH <sub>4</sub>	4.00 Winter	Standard is a function of pH and Temperature.
TDS, mg/l:	3,600.00 Winter	1950.00 mg/l

**Modeling Parameters:**  
Acute River Width: 50.0%  
Chronic River Width: 100.0%

**Antidegradation Review:** An Antidegradation Level I Review was completed.  
Antidegradation Level II Review is NOT Required

**Permit Writer:****WLA by:****WQM Sec. Approval:****TMDL Sec. Approval:**

FILE COPY

**WASTELOAD ANALYSIS [WLA]  
Addendum: Statement of Basis**

Date: 9/14/2012  
Time: 4:37 PM

Facilities: EA Miller  
Discharging to: Ditch to So. Fork of Spring Creek

UPDES No: UT00000281

**I. Introduction**

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated in terms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

**II. Receiving Water and Stream Classification**

Ditch to So. Fork of Spring Creek      2B, 3A, 3B, 4  
Antidegradation Review:      Antidegradation Level II Review is NOT Required

**III. Numeric Stream Standards for Protection of Aquatic Wildlife**

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	6.50 mg/l (30 Day Average) N/A mg/l (7Day Average) 3.00 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

**Acute and Chronic Heavy Metals (Dissolved)**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Aluminum	87.00 ug/l**	0.056 lbs/day	750.00 ug/l	0.485 lbs/day
Arsenic	190.00 ug/l	0.123 lbs/day	340.00 ug/l	0.220 lbs/day
Cadmium	0.75 ug/l	0.000 lbs/day	8.65 ug/l	0.006 lbs/day
Chromium III	266.17 ug/l	0.172 lbs/day	5568.73 ug/l	3.602 lbs/day
Chromium VI	11.00 ug/l	0.007 lbs/day	16.00 ug/l	0.010 lbs/day
Copper	30.26 ug/l	0.020 lbs/day	51.23 ug/l	0.033 lbs/day
Iron			1000.00 ug/l	0.647 lbs/day
Lead	18.36 ug/l	0.012 lbs/day	471.16 ug/l	0.305 lbs/day
Mercury	0.012 ug/l	0.000 lbs/day	2.40 ug/l	0.002 lbs/day
Nickel	167.21 ug/l	0.108 lbs/day	1503.94 ug/l	0.973 lbs/day

Selenium	4.60 ug/l	0.003 lbs/day	20.00 ug/l	0.013 lbs/day
Silver	N/A ug/l	N/A lbs/day	40.41 ug/l	0.026 lbs/day
Zinc	384.76 ug/l	0.249 lbs/day	384.76 ug/l	0.249 lbs/day

\* Allowed below discharge

\*\*Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO<sub>3</sub>

Metals Standards based upon a hardness of 398.266334785314 mg/l as CaCO<sub>3</sub> where applicable.

#### Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Aldrin	ug/l		1.5000 ug/l	9.702E-04 lbs/day
Chlordane	0.0043 ug/l	2.781E-06 lbs/day	1.2000 ug/l	7.762E-04 lbs/day
DDT, DDE	0.0010 ug/l	6.468E-07 lbs/day	0.5500 ug/l	3.557E-04 lbs/day
Dieldrin	0.0019 ug/l	1.229E-06 lbs/day	1.2500 ug/l	8.085E-04 lbs/day
Endosulfan	0.0560 ug/l	3.622E-05 lbs/day	0.1100 ug/l	7.115E-05 lbs/day
Endrin	0.0023 ug/l	1.488E-06 lbs/day	0.0900 ug/l	5.821E-05 lbs/day
Guthion			0.0100	
Heptachlor	0.0038 ug/l	2.458E-06 lbs/day	0.2600 ug/l	1.682E-04 lbs/day
Lindane	0.0800 ug/l	5.174E-05 lbs/day	1.0000 ug/l	6.468E-04 lbs/day
Methoxychlor			0.0300	
Mirex			0.0100	
Parathion			0.0400	
PCB's	0.0140 ug/l	9.055E-06 lbs/day	2.0000 ug/l	1.294E-03 lbs/day
Pentachlorophenol	13.0000 ug/l	8.408E-03 lbs/day	20.0000 ug/l	1.294E-02 lbs/day
Toxephene	0.0002 ug/l	1.294E-07 lbs/day	0.7300 ug/l	4.722E-04 lbs/day

#### IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic	N/A		100.0 ug/l	6.47E-02 lbs/day
Boron	N/A		750.0 ug/l	4.85E-01 lbs/day
Cadmium	N/A		10.0 ug/l	6.47E-03 lbs/day
Chromium	N/A		100.0 ug/l	6.47E-02 lbs/day
Copper	N/A		200.0 ug/l	1.29E-01 lbs/day
Lead	N/A		100.0 ug/l	6.47E-02 lbs/day
Selenium	N/A		50.0 ug/l	3.23E-02 lbs/day
TDS	N/A		1200.0 mg/l	3.88E-01 tons/day

#### V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

Metals	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic	N/A		50.0 ug/l	3.23E-02 lbs/day
Barium	N/A		1000.0 ug/l	6.47E-01 lbs/day
Cadmium	N/A		10.0 ug/l	6.47E-03 lbs/day
Chromium	N/A		50.0 ug/l	3.23E-02 lbs/day
Lead	N/A		50.0 ug/l	3.23E-02 lbs/day
Mercury	N/A		2.0 ug/l	1.29E-03 lbs/day
Selenium	N/A		10.0 ug/l	6.47E-03 lbs/day
Silver	N/A		50.0 ug/l	3.23E-02 lbs/day
Fluoride (3)	N/A		1.4 ug/l	9.06E-04 lbs/day
to	N/A		2.4 ug/l	1.55E-03 lbs/day
Nitrates as N	N/A		10.0 ug/l	6.47E-03 lbs/day

Chlorophenoxy Herbicides	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
2,4-D	N/A		100.0 ug/l	6.47E-02 lbs/day
2,4,5-TP	N/A		10.0 ug/l	6.47E-03 lbs/day

Endrin	N/A	0.2 ug/l	1.29E-04 lbs/day
Hexachlorocyclohexane (Lindane)	N/A	4.0 ug/l	2.59E-03 lbs/day
Methoxychlor	N/A	100.0 ug/l	6.47E-02 lbs/day
Toxaphene	N/A	5.0 ug/l	3.23E-03 lbs/day

## VI. Numeric Stream Standards the Protection of Human Health from Water &amp; Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C [2 Liters/Day for 70 Kg Person over 70 Yr.]		Class 3A, 3B [6.5 g for 70 Kg Person over 70 Yr.]	
Antimony	6E+00 ug/l	6E+00 lbs/day	6E+02 ug/l	6.65E+02 lbs/day
Arsenic				
Beryllium				
Cadmium				
Chromium III				
Chromium VI				
Copper	1E+03 ug/l	1E+03 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
Lead				
Mercury				
Nickel	1E+02 ug/l	1E+02 lbs/day	5E+03 ug/l	4.78E+03 lbs/day
Selenium			4E+03 ug/l	4.36E+03 lbs/day
Silver				
Thallium	2E-01 ug/l	2E-01 lbs/day	5E-01 ug/l	4.84E-01 lbs/day
Zinc	7E+03 ug/l	8E+03 lbs/day	3E+04 ug/l	2.70E+04 lbs/day
Cyanide	1E+02 ug/l	1E+02 lbs/day	1E+02 ug/l	1.45E+02 lbs/day
Asbestos				
2,3,7,8-TCDD Dioxin	5E-09			
Acrolein	2E+02 ug/l	2E+02 lbs/day	3E+02 ug/l	2.98E+02 lbs/day
Acrylonitrile	5E-02 ug/l	5E-02 lbs/day	3E-01 ug/l	2.59E-01 lbs/day
Alachlor	2E+00 ug/l	2E+00 lbs/day		
Atrazine	3E+00 ug/l	3E+00 lbs/day		
Benzene	2E+00 ug/l	2E+00 lbs/day	5E+01 ug/l	5.29E+01 lbs/day
Bromoform	4E+00 ug/l	4E+00 lbs/day	1E+02 ug/l	1.45E+02 lbs/day
Carbofuran	4E+01 ug/l	4E+01 lbs/day		
Carbon Tetrachloride	2E-01 ug/l	2E-01 lbs/day	2E+00 ug/l	1.66E+00 lbs/day
Chlorobenzene	1E+02 ug/l	1E+02 lbs/day	2E+03 ug/l	1.66E+03 lbs/day
Chlorodibromomethane	4E-01 ug/l	4E-01 lbs/day	1E+01 ug/l	1.35E+01 lbs/day
Chloroethane				
2-Chloroethylvinyl Ether				
Chloroform	6E+00 ug/l	6E+00 lbs/day	5E+02 ug/l	4.88E+02 lbs/day
Dalapon	2E+02 ug/l	2E+02 lbs/day		
Di(2ethylhexyl)adipate	4E+02 ug/l	4E+02 lbs/day		
Dibromochloropropane	2E-01 ug/l	2E-01 lbs/day		
Dichlorobromomethane	6E-01 ug/l	6E-01 lbs/day	2E+01 ug/l	1.76E+01 lbs/day
1,1-Dichloroethane				
1,2-Dichloroethane	4E-01 ug/l	4E-01 lbs/day	4E+01 ug/l	3.84E+01 lbs/day
1,1-Dichloroethylene	7E+00 ug/l	7E+00 lbs/day	7E+03 ug/l	7.38E+03 lbs/day
Dichloroethylene (cis-1,2	7E+01 ug/l	7E+01 lbs/day	0E+00 ug/l	
Dinoseb	7E+00 ug/l	7E+00 lbs/day	0E+00 ug/l	
Diquat	2E+01 ug/l	2E+01 lbs/day	0E+00 ug/l	
1,2-Dichloropropane	5E-01 ug/l	5E-01 lbs/day	2E+01 ug/l	1.56E+01 lbs/day
1,3-Dichloropropene	3E-01 ug/l	3E-01 lbs/day	2E+01 ug/l	2.18E+01 lbs/day
Endothall	1E+02 ug/l	1E+02 lbs/day		
Ethylbenzene	5E+02 ug/l	5E+02 lbs/day	2E+03 ug/l	2.17E+03 lbs/day
Ethylene Dibromide	5E-02 ug/l	5E-02 lbs/day		
Glyphosate	7E+02 ug/l	7E+02 lbs/day		
Haloacetic acids	6E+01 ug/l	6E+01 lbs/day		
Methyl Bromide	5E+01 ug/l	5E+01 lbs/day	2E+03 ug/l	1.56E+03 lbs/day

Methyl Chloride				
Methylene Chloride	5E+00 ug/l	5E+00 lbs/day	6E+02 ug/l	6.13E+02 lbs/day
Ocamyl (vidate)	2E+02 ug/l	2E+02 lbs/day		
Picloram	5E+02 ug/l	5E+02 lbs/day		
Simazine	4E+00 ug/l	4E+00 lbs/day		
Styrene	1E+02 ug/l	1E+02 lbs/day		
1,1,2,2-Tetrachloroethane	2E-01 ug/l	2E-01 lbs/day	4E+00 ug/l	4.15E+00 lbs/day
Tetrachloroethylene	7E-01 ug/l	7E-01 lbs/day	3E+00 ug/l	3.41E+00 lbs/day
Toluene	1E+03 ug/l	1E+03 lbs/day	2E+04 ug/l	1.56E+04 lbs/day
1,2 -Trans-Dichloroethyle	1E+02 ug/l	1E+02 lbs/day	1E+04 ug/l	1.04E+04 lbs/day
1,1,1-Trichloroethane	2E+02 ug/l	2E+02 lbs/day		
1,1,2-Trichloroethane	6E-01 ug/l	6E-01 lbs/day	2E+01 ug/l	1.66E+01 lbs/day
Trichloroethylene	3E+00 ug/l	3E+00 lbs/day	3E+01 ug/l	3.11E+01 lbs/day
Vinyl Chloride	3E-02 ug/l	3E-02 lbs/day	2E+00 ug/l	2.49E+00 lbs/day
Xylenes	1E+04 ug/l	1E+04 lbs/day		
2-Chlorophenol	8E+01 ug/l	8E+01 lbs/day	2E+02 ug/l	1.54E+02 lbs/day
2,4-Dichlorophenol	8E+01 ug/l	8E+01 lbs/day	3E+02 ug/l	3.00E+02 lbs/day
2,4-Dimethylphenol	4E+02 ug/l	4E+02 lbs/day	9E+02 ug/l	8.76E+02 lbs/day
2-Methyl-4,6-Dinitrophenol	1E+01 ug/l	1E+01 lbs/day	3E+02 ug/l	2.91E+02 lbs/day
2,4-Dinitrophenol	7E+01 ug/l	7E+01 lbs/day	5E+03 ug/l	5.50E+03 lbs/day
2-Nitrophenol				
4-Nitrophenol				
3-Methyl-4-Chlorophenol				
Penetachlorophenol	3E-01 ug/l	3E-01 lbs/day	3E+00 ug/l	3.11E+00 lbs/day
Phenol	2E+04 ug/l	2E+04 lbs/day	2E+06 ug/l	1.77E+06 lbs/day
2,4,6-Trichlorophenol	1E+00 ug/l	1E+00 lbs/day	2E+00 ug/l	2.47E+00 lbs/day
Acenaphthene	7E+02 ug/l	7E+02 lbs/day	1E+03 ug/l	1.02E+03 lbs/day
Acenaphthylene				
Anthracene	8E+03 ug/l	8E+03 lbs/day	4E+04 ug/l	4.14E+04 lbs/day
Benzidine	9E-05 ug/l	9E-05 lbs/day	2E-04 ug/l	2.06E-04 lbs/day
BenzoaAnthracene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.86E-02 lbs/day
BenzoaPyrene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.86E-02 lbs/day
BenzobFluoranthene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.86E-02 lbs/day
BenzoghiPerylene	0E+00 ug/l	0E+00 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
BenzokFluoranthene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.86E-02 lbs/day
Bis2-ChloroethoxyMethane	0E+00 ug/l	0E+00 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
Bis2-ChloroethylEther	3E-02 ug/l	3E-02 lbs/day	5E-01 ug/l	5.50E-01 lbs/day
Bis2-ChloroisopropylEther	1E+03 ug/l	1E+03 lbs/day	7E+04 ug/l	6.75E+04 lbs/day
Bis2-EthylhexylPhthalate	1E+00 ug/l	1E+00 lbs/day	2E+00 ug/l	2.26E+00 lbs/day
4-Bromophenyl Phenyl Ether	0E+00			
Butylbenzyl Phthalate	2E+03 ug/l	2E+03 lbs/day	2E+03 ug/l	1.94E+03 lbs/day
2-Chloronaphthalene	1E+03 ug/l	1E+03 lbs/day	2E+03 ug/l	1.64E+03 lbs/day
4-Chlorophenyl Phenyl Ether				
Chrysene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.86E-02 lbs/day
Dibenzo(a, h)Anthracene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.86E-02 lbs/day
1,2-Dichlorobenzene	4E+02 ug/l	4E+02 lbs/day	1E+03 ug/l	1.34E+03 lbs/day
1,3-Dichlorobenzene	3E+02 ug/l	3E+02 lbs/day	1E+03 ug/l	9.91E+02 lbs/day
1,4-Dichlorobenzene	6E+01 ug/l	6E+01 lbs/day	2E+02 ug/l	1.96E+02 lbs/day
3,3-Dichlorobenzidine	2E-02 ug/l	2E-02 lbs/day	3E-02 ug/l	2.87E-02 lbs/day
Diethyl Phthalate	2E+03 ug/l	2E+03 lbs/day	4E+04 ug/l	4.57E+04 lbs/day
Dimethyl Phthalate	3E+05 ug/l	3E+05 lbs/day	1E+06 ug/l	1.14E+06 lbs/day
Di-n-Butyl Phthalate	2E+03 ug/l	2E+03 lbs/day	5E+03 ug/l	4.64E+03 lbs/day
2,4-Dinitrotoluene	1E-01 ug/l	1E-01 lbs/day	3E+00 ug/l	3.53E+00 lbs/day
2,6-Dinitrotoluene				
Di-n-Octyl Phthalate				
1,2-Diphenylhydrazine	4E-02 ug/l	4E-02 lbs/day	2E-01 ug/l	2.07E-01 lbs/day
Fluoranthene	1E+02 ug/l	1E+02 lbs/day		
Fluorene	1E+03 ug/l	1E+03 lbs/day	5E+03 ug/l	5.48E+03 lbs/day
Hexachlorobenzene	3E-04 ug/l	3E-04 lbs/day	3E-04 ug/l	2.96E-04 lbs/day
Hexachlorobutidine	4E-01 ug/l	4E-01 lbs/day	2E+01 ug/l	1.87E+01 lbs/day

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Hexachloroethane	1E+00 ug/l	1E+00 lbs/day	3E+00 ug/l	3.40E+00 lbs/day
Hexachlorocyclopentadiene	4E+01 ug/l	4E+01 lbs/day	1E+03 ug/l	1.14E+03 lbs/day
Ideno 1,2,3-cdPyrene	4E-03 ug/l	4E-03 lbs/day	2E-02 ug/l	1.86E-02 lbs/day
Isophorone	4E+01 ug/l	4E+01 lbs/day	1E+03 ug/l	9.97E+02 lbs/day
Naphthalene			ug/l	
Nitrobenzene	2E+01 ug/l	2E+01 lbs/day	7E+02 ug/l	7.16E+02 lbs/day
N-Nitrosodimethylamine	7E-04 ug/l	7E-04 lbs/day	3E+00 ug/l	3.12E+00 lbs/day
N-Nitrosodi-n-Propylamine	5E-03 ug/l	5E-03 lbs/day	5E-01 ug/l	5.30E-01 lbs/day
N-Nitrosodiphenylamine	3E+00 ug/l	3E+00 lbs/day	6E+00 ug/l	6.17E+00 lbs/day
Phenanthrene				
Pyrene	8E+02 ug/l	8E+02 lbs/day	4E+03 ug/l	4.14E+03 lbs/day
1,2,4-Trichlorobenzene	4E+01 ug/l	4E+01 lbs/day	7E+01 ug/l	7.20E+01 lbs/day
Aldrin	5E-05 ug/l	5E-05 lbs/day	5E-05 ug/l	5.10E-05 lbs/day
alpha-BHC	3E-03 ug/l	3E-03 lbs/day	5E-03 ug/l	5.04E-03 lbs/day
beta-BHC	9E-03 ug/l	9E-03 lbs/day	2E-02 ug/l	1.75E-02 lbs/day
gamma-BHC (Lindane)	2E-01 ug/l	2E-01 lbs/day	2E+00 ug/l	1.87E+00 lbs/day
delta-BHC	0E+00 ug/l	0E+00 lbs/day	0E+00 ug/l	0.00E+00 lbs/day
Chlordane	8E-04 ug/l	8E-04 lbs/day	8E-04 ug/l	8.26E-04 lbs/day
4,4-DDT	2E-04 ug/l	2E-04 lbs/day	2E-04 ug/l	2.24E-04 lbs/day
4,4-DDE	2E-04 ug/l	2E-04 lbs/day	2E-04 ug/l	2.24E-04 lbs/day
4,4-DDD	3E-04 ug/l	3E-04 lbs/day	3E-04 ug/l	3.16E-04 lbs/day
Dieldrin	5E-05 ug/l	5E-05 lbs/day	5E-05 ug/l	5.51E-05 lbs/day
alpha-Endosulfan	6E+01 ug/l	6E+01 lbs/day	9E+01 ug/l	9.12E+01 lbs/day
beta-Endosulfan	6E+01 ug/l	6E+01 lbs/day	9E+01 ug/l	9.12E+01 lbs/day
Endosulfan Sulfate	6E+01 ug/l	6E+01 lbs/day	9E+01 ug/l	9.12E+01 lbs/day
Endrin	6E-02 ug/l	6E-02 lbs/day	6E-02 ug/l	6.12E-02 lbs/day
Endrin Aldehyde	3E-02 ug/l	3E-02 lbs/day	3E-01 ug/l	3.11E-01 lbs/day
Heptachlor	8E-05 ug/l	8E-05 lbs/day	8E-05 ug/l	8.05E-05 lbs/day
Heptachlor Epoxide	4E-05 ug/l	4E-05 lbs/day	4E-05 ug/l	3.98E-05 lbs/day
Polychlorinated Biphenyls	6E-05 ug/l	7E-05 lbs/day	6E-05 ug/l	6.52E-05 lbs/day
PCB's				
Toxaphene	3E-04 ug/l	3E-04 lbs/day	3E-04 ug/l	0.00E+00 lbs/day

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

## VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon QUAL2kw EPA and the University of Washington.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. QUAL2kw default values or as adjusted by user, as noted.

## VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

### Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

### Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

#### Current Headwater/Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH4 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer	0.100	15.0	8.3	0.05	0.10	9.10	0.00	1875.0
Fall	0.000	0.0	0.0	0.00	0.00	0.00	0.00	0.0
Winter	0.120	15.0	8.2	0.31	0.10	10.70	0.00	2335.0
Spring	0.000	0.0	0.0	0.00	0.00	0.00	0.00	0.0
Dissolved	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb

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Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	15.00	2.50	0.38	133.08	5.50	5.59	0.00	9.18
Dissolved	Hg	Ni	Se	Ag	Zn	Boron		
Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
All Seasons	0.0060	3.75	1.30	1.00	41.00	375.0	* 1/2 MDL	

## Projected Discharge Information [See page 5 for additional information]

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	2.00	25.00	3,000.00	25.01
Fall	-	-	-	-
Winter	2.00	25.00	3,600.00	30.02
Spring	-	-	-	-

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

## IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

### Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average		
Summer	2.00 MGD	3.094 cfs	
Fall	- MGD	0.000 cfs	
Winter	2.00 MGD	3.094 cfs	
Spring	- MGD	0.000 cfs	

### Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 2 MGD. If the discharger is allowed to have a flow greater than 2 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation as indicated above; or, include loading effluent limits in the permit.

### Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segments if the values below are met.

WET Requirements	LC50 >	EOP Effluent	[Acute]
System is Totally Mixed	IC25 >	96.3% Effluent	[Chronic]



### Effluent Limitation for Biological Oxygen Demand (BOD<sub>5</sub>) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD<sub>5</sub> limitation as follows:

Season	Concentration	
Summer	25.00 mg/l as CBOD <sub>5</sub>	416.92 lbs/day
Fall	- mg/l as CBOD <sub>5</sub>	- lbs/day
Winter	25.00 mg/l as CBOD <sub>5</sub>	416.92 lbs/day
Spring	- mg/l as CBOD <sub>5</sub>	- lbs/day

### Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	Concentration	Load
Summer	4.00 mg/l	66.71 lbs/day
Fall	- mg/l	- lbs/day
Winter	4.00 mg/l	66.71 lbs/day
Spring	- mg/l	- lbs/day

### Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	3.00 mg/l as N	50.03 lbs/day
	1 Hour Avg. - Acute	11.78 mg/l as N	196.52 lbs/day
Fall	4 Day Avg. - Chronic	- mg/l as N	- lbs/day
	1 Hour Avg. - Acute	- mg/l as N	- lbs/day
Winter	4 Day Avg. - Chronic	4.00 mg/l as N	66.71 lbs/day
	1 Hour Avg. - Acute	15.71 mg/l as N	262.03 lbs/day
Spring	4 Day Avg. - Chronic	- mg/l as N	- lbs/day
	1 Hour Avg. - Acute	- mg/l as N	- lbs/day

### Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration	Load
Summer	4 Day Avg. - Chronic	0.25 mg/l	4.17 lbs/day
	1 Hour Avg. - Acute	0.43 mg/l	7.20 lbs/day
Fall	4 Day Avg. - Chronic	- mg/l	- lbs/day
	1 Hour Avg. - Acute	- mg/l	- lbs/day
Winter	4 Day Avg. - Chronic	0.15 mg/l	2.50 lbs/day
	1 Hour Avg. - Acute	0.26 mg/l	4.32 lbs/day
Spring	4 Day Avg. - Chronic	- mg/l	- lbs/day
	1 Hour Avg. - Acute	- mg/l	- lbs/day

### Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season	Concentration	Load
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Summer	Maximum, Acute	3,000.0 mg/l	50,030 tons/day
Fall	Maximum, Acute	- mg/l	- tons/day
Winter	Maximum, Acute	3,600.0 mg/l	60,036 tons/day
Spring	Maximum, Acute	- mg/l	- tons/day

Colorado Salinity Form Limits

Determined by Permitting Section

#### Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	Maximum	25.00 Deg. C.	77.0 Deg. F
Fall	Maximum	- Deg. C.	- Deg. F
Winter	Maximum	25.00 Deg. C.	77.0 Deg. F
Spring	Maximum	- Deg. C.	- Deg. F

#### Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segments if the values below are met.

WET Requirements	LC50 >	EOP Effluent	[Acute]
	IC25 >	96.3% Effluent	[Chronic]

#### Effluent Limitations for Organics [Pesticides] Based upon Water Quality Standards [Class 3]

In-stream criteria of downstream segments for Organics [Pesticides]  
will be met with an effluent limit as follows:

	4 Day Average		1 Hour Average	
	Concentration	Load	Concentration	Load
Aldrin			1.5E+00 ug/l	9.80E-01 lbs/day
Chlordane	4.38E-03 ug/l	2.84E-03 lbs/day	1.2E+00 ug/l	7.91E-01 lbs/day
DDT, DDE	1.02E-03 ug/l	6.59E-04 lbs/day	5.6E-01 ug/l	3.63E-01 lbs/day
Dieldrin	1.94E-03 ug/l	1.25E-03 lbs/day	1.3E+00 ug/l	8.24E-01 lbs/day
Endosulfan	5.71E-02 ug/l	3.69E-02 lbs/day	1.1E-01 ug/l	7.22E-02 lbs/day
Endrin	2.34E-03 ug/l	1.52E-03 lbs/day	9.2E-02 ug/l	5.93E-02 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	6.53E-03 lbs/day
Heptachlor	3.87E-03 ug/l	2.51E-03 lbs/day	2.7E-01 ug/l	1.71E-01 lbs/day
Lindane	8.16E-02 ug/l	5.27E-02 lbs/day	1.0E+00 ug/l	6.59E-01 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02 ug/l	1.96E-02 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02 ug/l	6.53E-03 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02 ug/l	2.61E-02 lbs/day
PCB's	1.43E-02 ug/l	9.23E-03 lbs/day	2.0E+00 ug/l	1.32E+00 lbs/day
Pentachlorophenol	1.33E+01 ug/l	8.57E+00 lbs/day	2.0E+01 ug/l	1.31E+01 lbs/day
Toxephene	2.04E-04 ug/l	1.32E-04 lbs/day	7.4E-01 ug/l	4.81E-01 lbs/day

#### Effluent Limitations for E. coli Based upon Water Quality Standards [Class 2]

E. coli 126.0 organisms per 100 ml

#### Effluent Targets for Pollution Indicators Based upon Water Quality Standards

In-stream criteria of downstream segments for Pollution Indicators  
will be met with an effluent limit as follows:

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	51.0 pCi/L	0.00
BOD (mg/l)	5.1 mg/l	85.0 lbs/day
Nitrate as N (mg/l)	4.1 mg/l	68.0 lbs/day
Total Phosphorus as P	0.1 mg/l	0.1 lbs/day

Note: Pollution indicator targets are for information purposes only.

**Effluent Limitations for Protection of Human Health [Toxics Rule]**  
**Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)**

In-stream criteria of downstream segments for Protection of Human Health [Toxics]  
 will be met with an effluent limit as follows:

Toxic Organics	Effluent Limitation (30 Day Avg.) Class 1C	Maximum Concentration	
		Concentra Effluent Limit (30 Day Avg.) Class 3	Load
Antimony	5.709E+00	6.647E+02	
Arsenic			
Beryllium			
Cadmium			
Chromium III			
Chromium VI			
Copper	1.350E+03		
Lead			
Mercury			
Nickel	1.037E+02	4.78E+03	
Selenium		4.36E+03	
Silver		0.00E+00	
Thallium	2.447E-01	4.84E-01	
Zinc	7.685E+03	2.70E+04	
Cyanide	1.453E+02	1.45E+02	
Asbestos	7.000E+06		
2,3,7,8-TCDD Dioxin		5.20E-09	
Acrolein	1.937E+02	2.98E+02	
Acrylonitrile	5.199E-02	2.59E-01	
Alachlor	2.039E+00	0.00E+00	
Atrazine	3.058E+00	0.00E+00	
Benzene	2.243E+00	5.29E+01	
Bromoform	4.383E+00	1.45E+02	
Carbofuran	4.078E+01		
Carbon Tetrachloride	2.345E-01	1.66E+00	
Chlorobenzene	1.019E+02	1.66E+03	
Chlorodibromomethane	4.078E-01	1.35E+01	
Chloroethane			
2-Chloroethylvinyl Ether			
Chloroform	5.811E+00	4.88E+02	
Dalapon	2.039E+02		
Di(2ethylhexyl)adipate	4.078E+02		
Dibromochloropropane	2.039E-01		
Dichlorobromomethane	5.607E-01	1.76E+01	
1,1-Dichloroethane		0.00E+00	
1,2-Dichloroethane	3.874E-01	3.84E+01	
1,1-Dichloroethylene	7.136E+00	7.38E+03	
Dichloroethylene (cis-1,2	7.136E+01	0.00E+00	

Dinose	7.136E+00	0.00E+00
Diquat	2.039E+01	0.00E+00
1,2-Dichloropropane	5.097E-01	1.56E+01
1,3-Dichloropropene	3.466E-01	2.18E+01
Endothall	1.019E+02	0.00E+00
Ethylbenzene	5.403E+02	2.17E+03
Ethylene Dibromide	5.097E-02	0.00E+00
Glyphosate	7.136E+02	0.00E+00
Haloacetic acids	6.116E+01	0.00E+00
Methyl Bromide	4.791E+01	1.56E+03
Methyl Chloride	0.000E+00	
Methylene Chloride	4.689E+00	6.13E+02
Ocamyl (vidate)	2.039E+02	
Picloram	5.097E+02	
Simazine	4.078E+00	
Styrene	1.019E+02	
1,1,2,2-Tetrachloroethane	1.733E-01	4.15E+00
Tetrachloroethylene	7.034E-01	3.41E+00
Toluene	1.019E+03	1.56E+04
1,2 -Trans-Dichloroethyle	1.019E+02	1.04E+04
1,1,1-Trichloroethane	2.039E+02	0.00E+00
1,1,2-Trichloroethane	6.014E-01	1.66E+01
Trichloroethylene	2.548E+00	3.11E+01
Vinyl Chloride	2.548E-02	2.49E+00
Xylenes	1.019E+04	
2-Chlorophenol	8.257E+01	1.54E+02
2,4-Dichlorophenol	7.849E+01	3.00E+02
2,4-Dimethylphenol	3.874E+02	8.76E+02
2-Methyl-4,6-Dinitrophenol	1.325E+01	2.91E+02
2,4-Dinitrophenol	7.034E+01	5.50E+03
2-Nitrophenol		
4-Nitrophenol		
3-Methyl-4-Chlorophenol		
Penetachlorophenol	2.752E-01	3.11E+00
Phenol	2.141E+04	1.77E+06
2,4,6-Trichlorophenol	1.427E+00	2.47E+00
Acenaphthene	6.830E+02	1.02E+03
Acenaphthylene	0.000E+00	0.00E+00
Anthracene	8.461E+03	4.14E+04
Benzidine	8.767E-05	2.06E-04
Benzo(a)Anthracene	3.874E-03	1.86E-02
Benzo(a)Pyrene	3.874E-03	1.86E-02
Benzob(Fluoranthene)	3.874E-03	1.86E-02
BenzoghiPerylene		0.00E+00
BenzokFluoranthene	3.874E-03	1.86E-02
Bis(2-Chloroethoxy)Methane		0.00E+00
Bis(2-Chloroethyl)Ether	3.058E-02	5.50E-01
Bis(2-Chloroisopropyl)Ether	1.427E+03	6.75E+04
Bis(2-Ethylhexyl)Phthalate	1.223E+00	2.26E+00
4-Bromophenyl Phenyl Ether		0.00E+00
Butylbenzyl Phthalate	1.529E+03	1.94E+03
2-Chloronaphthalene	1.019E+03	1.64E+03
4-Chlorophenyl Phenyl Ether		
Chrysene	3.874E-03	1.86E-02
Dibenzo(a, h)Anthracene	3.874E-03	1.86E-02
1,2-Dichlorobenzene	4.281E+02	1.34E+03
1,3-Dichlorobenzene	3.262E+02	9.91E+02
1,4-Dichlorobenzene	6.422E+01	1.96E+02
3,3-Dichlorobenzidine	2.141E-02	2.87E-02
Diethyl Phthalate	1.733E+03	4.57E+04

Dimethyl Phthalate	2.752E+05	1.14E+06
Di-n-Butyl Phthalate	2.039E+03	4.64E+03
2,4-Dinitrotoluene	1.121E-01	3.53E+00
2,6-Dinitrotoluene		0.00E+00
Di-n-Octyl Phthalate		0.00E+00
1,2-Diphenylhydrazine	3.670E-02	2.07E-01
Fluoranthene	1.325E+02	
Fluorene	1.121E+03	5.48E+03
Hexachlorobenzene	2.854E-04	2.96E-04
Hexachlorobutenedine	4.485E-01	1.87E+01
Hexachloroethane	1.427E+00	3.40E+00
Hexachlorocyclopentadiene	4.078E+01	1.14E+03
Ideno 1,2,3-cdPyrene	3.874E-03	1.86E-02
Isophorone	3.568E+01	9.97E+02
Naphthalene		
Nitrobenzene	1.733E+01	7.16E+02
N-Nitrosodimethylamine	7.034E-04	3.12E+00
N-Nitrosodi-n-Propylamine	5.097E-03	5.30E-01
N-Nitrosodiphenylamine	3.364E+00	6.17E+00
Phenanthrene		
Pyrene	8.461E+02	4.14E+03
1,2,4-Trichlorobenzene	3.568E+01	7.20E+01
Aldrin	4.995E-05	5.10E-05
alpha-BHC	2.650E-03	5.04E-03
beta-BHC	9.276E-03	1.75E-02
gamma-BHC (Lindane)	2.039E-01	1.87E+00
delta-BHC		0.00E+00
Chlordane	8.155E-04	8.26E-04
4,4-DDT	2.243E-04	2.24E-04
4,4-DDE	2.243E-04	2.24E-04
4,4-DDD	3.160E-04	3.16E-04
Dieldrin	5.301E-05	5.51E-05
alpha-Endosulfan	6.320E+01	9.12E+01
beta-Endosulfan	6.320E+01	9.12E+01
Endosulfan Sulfate	6.320E+01	9.12E+01
Endrin	6.014E-02	6.12E-02
Endrin Aldehyde	2.956E-02	3.11E-01
Heptachlor	8.053E-05	8.05E-05
Heptachlor Epoxide	3.976E-05	3.98E-05
PCBs	6.524E-05	6.52E-05
Toxaphene	2.854E-04	

**Metals Effluent Limitations for Protection of All Beneficial Uses  
Based upon Water Quality Standards and Toxics Rule**

	Class 3: Chronic Aquatic Wildlife ug/l	Class 3: Acute Aquatic Wildlife ug/l	Class 1C: Drinking Water Supply	Class 1C: Acute Toxics Drinking Water Source ug/l	Class 3: Acute Toxics Drinking & Consumption Criteria ug/l	Class 4: Acute Agricultural ug/l	Acute Most Stringent ug/l
Aluminum	N/A	764.3					764.3
Antimony				5.7			5.7
Arsenic	197.3	346.5	51.8			103.8	51.8
Asbestos				7.00E+06			7000000.0
Barium			1019.4				1019.4
Beryllium							0.0
Cadmium	0.8	8.8	10.4			10.4	0.8
Chromium (III)	271.3	5674.1	46.8				46.8
Chromium (VI)	11.21	16.2				98.7	11.2
Copper	31.2	52.1		1350.2		207.5	31.2
Cyanide	5.3	22.4		145.3			5.3
Iron		1019.4					1019.4
Lead	18.7	480.1	51.6			103.5	18.7
Mercury	0.012	2.45	2.08				0.0
Nickel	173.5	1533.0		103.7			103.7
Selenium	4.7	20.4	10.3		4362.6	51.9	4.7
Silver		41.2	51.9				41.2
Thallium							0.0
Zinc	398.1	391.4			27006.8		391.4
Boron						764.5	764.5

**Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]**

[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	764.3	N/A	
Antimony	5.71		
Arsenic	51.8	197.3	Acute Controls
Asbestos	7.00E+06		
Barium	1019.4		
Beryllium			
Cadmium	0.8	0.8	
Chromium (III)	46.8	271	Acute Controls
Chromium (VI)	11.2	11.2	
Copper	31.2	31.2	
Cyanide	5.3	5.3	
Iron	1019.4		
Lead	18.7	18.7	
Mercury	0.012	0.012	
Nickel	103.7	174	Acute Controls
Selenium	4.7	4.7	
Silver	41.2	N/A	
Thallium	0.0		
Zinc	391.4	398.1	Acute Controls
Boron	764.54		

Other Effluent Limitations are based upon R317-1.

#### **X. Antidegradation Considerations**

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an **Antidegradation Level II Review is NOT Required.**

#### **XI. Colorado River Salinity Forum Considerations**

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

#### **XII. Summary Comments**

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important downstream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

#### **XIII. Notice of UPDES Requirement**

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

#### **XIV. Special Considerations**

EA Miller discharges to a tributary of Spring Creek which is listed on the Utah 303(d) listed for total phosphorous (TP), ammonia and dissolved oxygen (DO). A TMDL was completed for Spring Creek on September 9th, 2002. The TMDL set the load allocation for EA Miller at 170 kg/yr TP based on the anticipated capacity of the plant (2 mgd) and an average total phosphorus concentration of 0.10 mg/l (30 day average).

File Name: EA Miller & Hyrum WWTP.xls

**Level I Antidegradation Review for: EA Miller**

A level I Antidegradation Review has been completed. Level II antidegradation review not required.  
The proposed action is a simple permit renewal, with no increase in concentration or loading over the previously issued permit.

**APPENDIX - Coefficients and Other Model Information**

<i>Parameter</i>	<i>Value</i>	<i>Units</i>
<b><i>Stoichiometry:</i></b>		
Carbon	40	gC
Nitrogen	7.2	gN
Phosphorus	1	gP
Dry weight	100	gD
Chlorophyll	1	gA
<b><i>Inorganic suspended solids:</i></b>		
Settling velocity	0.06128	m/d
<b><i>Oxygen:</i></b>		
Reaeration model	Internal	
Temp correction	1.024	
Reaeration wind effect	None	
O2 for carbon oxidation	2.69	gO2/gC
O2 for NH4 nitrification	4.57	gO2/gN
Oxygen inhib model CBOD oxidation	Exponential	
Oxygen inhib parameter CBOD oxidation	0.60	L/mgO2
Oxygen inhib model nitrification	Exponential	
Oxygen inhib parameter nitrification	0.60	L/mgO2
Oxygen enhance model denitrification	Exponential	
Oxygen enhance parameter denitrification	0.60	L/mgO2
Oxygen inhib model phyto resp	Exponential	
Oxygen inhib parameter phyto resp	0.60	L/mgO2
Oxygen enhance model bot alg resp	Exponential	
Oxygen enhance parameter bot alg resp	0.60	L/mgO2
<b><i>Slow CBOD:</i></b>		
Hydrolysis rate	1.93545	/d
Temp correction	1.047	
Oxidation rate	1.18385	/d
Temp correction	1.047	
<b><i>Fast CBOD:</i></b>		
Oxidation rate	0.5447	/d
Temp correction	1.047	
<b><i>Organic N:</i></b>		
Hydrolysis	0.8365	/d
Temp correction	1.07	
Settling velocity	0.24964	m/d
<b><i>Ammonium:</i></b>		
Nitrification	2.1554	/d
Temp correction	1.07	
<b><i>Nitrate:</i></b>		
Denitrification	1.02986	/d
Temp correction	1.07	
Sed denitrification transfer coeff	0.05126	m/d
Temp correction	1.07	
<b><i>Organic P:</i></b>		
Hydrolysis	3.4361	/d
Temp correction	1.07	
Settling velocity	0.62926	m/d
<b><i>Inorganic P:</i></b>		
Settling velocity	0.01384	m/d
Sed P oxygen attenuation half sat constant	1.69154	mgO2/L



<b>Phytoplankton:</b>		
Max Growth rate	2.5	/d
Temp correction	1.07	
Respiration rate	0.1	/d
Temp correction	1.07	
Death rate	0	/d
Temp correction	1	
Nitrogen half sat constant	15	ugN/L
Phosphorus half sat constant	2	ugP/L
Inorganic carbon half sat constant	1.30E-05	moles/L
Phytoplankton use HCO3- as substrate	Yes	
Light model	Half saturation	
Light constant	57.6	langleys/d
Ammonia preference	25	ugN/L
Settling velocity	0.15	m/d
<b>Bottom Plants:</b>		
Growth model	Zero-order	
Max Growth rate	49.3845	gD/m2/d or /d
Temp correction	1.07	
First-order model carrying capacity	100	gD/m2
Basal respiration rate	0.48434	/d
Photo-respiration rate parameter	0	unitless
Temp correction	1.07	
Excretion rate	0.46367	/d
Temp correction	1.07	
Death rate	0.40579	/d
Temp correction	1.07	
External nitrogen half sat constant	163.368	ugN/L
External phosphorus half sat constant	47.556	ugP/L
Inorganic carbon half sat constant	1.05E-05	moles/L
Bottom algae use HCO3- as substrate	Yes	
Light model	Half saturation	
Light constant	2.09098	langleys/d
Ammonia preference	1.48807	ugN/L
Subsistence quota for nitrogen	29.957365	mgN/gD
Subsistence quota for phosphorus	0.3928168	mgP/gD
Maximum uptake rate for nitrogen	446.5885	mgN/gD/d
Maximum uptake rate for phosphorus	114.4235	mgP/gD/d
Internal nitrogen half sat ratio	2.856177	
Internal phosphorus half sat ratio	1.752547	
Nitrogen uptake water column fraction	1	
Phosphorus uptake water column fraction	1	
<b>Detritus (POM):</b>		
Dissolution rate	2.7754	/d
Temp correction	1.07	
Settling velocity	3.89475	m/d
<b>Pathogens:</b>		
Decay rate	0.8	/d
Temp correction	1.07	
Settling velocity	1	m/d
alpha constant for light mortality	1	/d per ly/hr
<b>pH:</b>		
Partial pressure of carbon dioxide	347	ppm
<b>Hyporheic metabolism</b>		
Model for biofilm oxidation of fast CBOD	Zero-order	
Max biofilm growth rate	5	gO2/m^2/d or /d
Temp correction	1.047	
Fast CBOD half-saturation	0.5	mgO2/L
Oxygen inhib model	Exponential	
Oxygen inhib parameter	0.60	L/mgO2

Respiration rate	0.2	/d
Temp correction	1.07	
Death rate	0.05	/d
Temp correction	1.07	
External nitrogen half sat constant	15	ugN/L
External phosphorus half sat constant	2	ugP/L
Ammonia preference	25	ugN/L
First-order model carrying capacity	100.0	gD/m2
<i>Generic constituent</i>		
Decay rate	30.0	/d
Temp correction	1.1	
Settling velocity	1.0	m/d

**Atmospheric Inputs:**

	Winter	Summer	Fall	Winter	Spring
Air Temperature, F	30.0	65.0	45.0	30.0	45.0
Dew Point, Temp., F	32.0	44.0	35.0	32.0	35.0
Wind, ft./sec. @ 21 ft.	2.0	2.0	2.0	2.0	2.0
Cloud Cover, %	10.0%	10.0%	10.0%	10.0%	10.0%
Shade, %	5.0%	5.0%	5.0%	5.0%	5.0%

**Other Inputs:**

Manning Coefficient	0.04	Default
Side Slope	10.0%	
Bottom Algae Coverage	50.0%	
Bottom SOD Coverage	50.0%	
Prescribed SOD	0.0	gO2/m2/d
Hyporheic Zone Thickness	10.0	cm
Hyporheic Exchange Flow	5.0%	
Hyporheic Sediment Porosity	10.0%	

DMR DATE	FLOW		PH		DO	AMMONIA	PHOS	NITROGEN	E-coli	TSS		BOD	BOD	OIL AND GREASE		TDS	FECAL COLIFORM
	DAILY MAX	DAILY MIN	DAILY MAX	DAILY MIN	30 DAY AVG	30 DAY AVG	30 DAY AVG	30 DAY AVG	30 DAY AVG	30 DAY AVG	30 DAY AVG	30 DAY AVG	30 DAY AVG	DAILY MAX	30 DAY AVG	30 DAY AVG	DAILY MAX
	2 MGD	6.5 SU	9 SU	4 mg/L	4 mg/L	1 mg/L*	134 mg/L	26 No./100m	25 mg/L	558 lbs/day	25 mg/L	469 lbs/day	10 mg/L	178 lbs/day	3000/3600 mg/L	460 No./100mL	
4/30/2007	1.693	7.6	8.1	7.5	0.09	26.7	0.18	1.5	13	71.5	8	52	4.5	29.2	2290	3	
5/31/2007	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
6/30/2007	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
7/31/2007	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
8/31/2007	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
9/30/2007	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
10/31/2007	1.858	7.2	8	6.5	0.1	26.9	1.1	3	18.5	261.6	26	193.3	6.4	62.2	2689	23	
11/30/2007	1.902	7.4	7.6	6.9	1.1	27.8	1.1	19.3	10.8	141.2	20	185.3	4.6	46	2734	32	
12/31/2007	1.961	7.1	7.7	9.6	0.3	27.5	4.5	2.2	14.3	173.7	18	172.4	5.8	57.2	2494	67	
1/31/2008	1.996	7.2	7.5	4.5	2.5	30.2	2.3	1.8	22.5	497.9	33	306.7	6.9	76.5	2680	21	
2/29/2008	1.833	7.2	7.3	4.1	0.11	32.8	0.1	16.1	8.5	118.9	13.5	189.5	4.2	0.3	2740	88	
3/31/2008	1.761	7.3	7.8	6.4	0.08	32.9	0.1	6.3	9.5	136	15	193.4	4	47.4	2800	27	
4/30/2008	1.452	7.3	7.6	7.8	0.06	31.1	0.1	3.9	9.5	87	18	149.3	4.6	33.6	2600	13	
5/31/2008	1.601	7.6	7.9	7.16	0.048	31.6	0.1	0.33	10	115.7	16	158.9	4.3	41.4	2800	1	
6/30/2008	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
7/31/2008	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
8/31/2008	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	
9/30/2008	1.236	7.3	7.8	6.94	0.09	31.7	0.1	2	23	229.6	15	149.7	4	39.9	2770	2	
10/31/2008	1.892	7.6	8.2	6.9	4.3	28.6	1.9	1.4	8.2	110.9	16	162.8	13	87.6	2540	3	
11/30/2008	1.94	7.6	8	8.7	25.6	25.6	16.8	3.4	10.5	157.7	18	233.98	5.1	5.1	2560	5	
12/31/2008	1.99	7.5	7.8	7.5	30	26.5	22.8	4.5	17.4	257.7	25	295.1	110	348.6	2480	14	
1/31/2009	1.981	7.4	7.6	7.1	37.1	29.8	30.6	7.7	13.5	210.4	33	356.5	5.3	70.3	2560	19	
2/28/2009	1.915	7.2	7.8	7.1	30	35.1	11.4	17	14	208.9	32	431.6	17	112.6	2460	27	
3/31/2009	1.972	7.2	7.8	7.8	15.6	30.1	9.7	19.3	10.5	149.9	21	231.5	5.6	53.9	2730	36	
4/30/2009	1.476	7.6	7.9	7.1	0.11	25.7	163	34.3	10.6	123.8	18	171.3	5	47.2	2690	55	
5/31/2009	1.438	7.6	7.9	6.8	0.58	24.3	173	16	7	79.1	14	138.2	5.2	47.9	2870	93	
6/30/2009	1.423	7.5	8	6.3	0.07	23.3	165.5	4.8	7	50.2	11	115.3	5.7	48.9	2750	816	
7/31/2009	1.887	7.6	7.9	6.15	0.088	21.8	169.5	2	4	37.3	12	109.5	4.2	39.5	2640	3	
8/31/2009	1.46	7.7	7.9	6.67	0.17	22.3	161.5	2	3	37.3	12	91.7	5	48	2830	6	
9/30/2009	1.646	7.8	8	6.4	0.15	21.8	159.5	2	3	37.6	12	99.6	6.7	47.6	2740	5	
10/31/2009	1.423	7.7	8	6.6	0.003	22.5	147.5	4.4	7	74.4	13	125.1	7.4	58.2	2560	9	
11/30/2009	1.391	7.6	7.9	6.6	0.09	23.5	156.5	13	4	38.9	12	117.4	6.2	57.8	2600	22	
12/31/2009	1.847	7.7	8.3	6.16	2.24	23.3	135.5	69	7	90.4	20	168.9	6.5	53.04	2450	93	
1/31/2010	1.747	7.4	7.7	6.3	21.7	28.2	129.2	71	17	231.1	32	338.8	6.5	79	2410	150	

2/28/2010	1.951	7.4	7.7	6.21	21.8	28.1	163.1	31.8	12	172.8	36	346.6	5	56.4	2720	83
3/31/2010	1.364	7.4	7.7	7.4	0.1	31.7	199.9	15	6	65.3	15	102.3	4.6	38.1	2840	61
4/30/2010	1.298	7.3	7.9	7	0.12	33.7	215.3	35.8	13.3	128.1	19	140.6	5.4	38.8	3030	53
5/31/2010	1.388	7.4	7.8	6.5	0.16	31.8	241.3	26.3	10.3	90.6	26	161.4	8	42.4	3060	51
6/30/2010	1.228	7.5	7.9	6.1	0.11	29.5	215.9	3	10.6	88.6	17	91.5	3.5	26.1	3080	10
7/31/2010	1.297	7.3	7.7	5.12	2.1	31.1	212.1	0	13.8	126.6	16	129.1	4.8	32.1	3110	0
8/31/2010	1.256	7.3	7.8	5.5	0.15	32.6	214.6	0	9.3	87.5	26	115.9	3	28.1	2880	0
9/30/2010	1.224	7.3	7.6	6.03	0.096	36	224.8	0	6	49.8	17	101.8	3	24.7	3070	0
10/31/2010	1.806	7.5	8.2	6.8	20.9	33.3	225.4	0.5	22.5	215.6	56	535.6	3	32.6	2740	1
11/30/2010	1.753	7.2	8.4	6.9	0.3	38.1	233.1	3.2	13	64.2	28	106.5	3	15.9	3020	16
12/31/2010	1.618	7.1	7.7	4.1	3.4	38.1	197.9	0.5	5.8	42	15	103	3	24.1	2890	2
1/31/2011	1.812	7	7.6	4.39	1	42.7	187.8	2.8	18.3	131.9	32	184.3	7.5	33.2	3080	11
2/28/2011	1.681	7.3	7.5	4.1	0.73	40	203.3	1.5	8	97	14	147.7	3.6	37.8	3280	6
3/31/2011	1.884	7.1	7.6	7	1.4	36.7	188.9	0	11.4	91.1	20	130.6	3.7	26.3	3160	0
4/30/2011	1.147	6.7	7.2	7.5	0.09	1.4	161.5	1	7.5	69	7	50.1	3	27	3070	1
5/31/2011	1.128	6.6	7.2	6.5	0.06	1	146.5	0.4	4.8	34.8	9.8	51.1	3	20.9	2880	1
6/30/2011	1.067	7.1	7.6	6.5	0.05	0.4	158.5	15.5	5.4	34.7	6.1	23	3.7	19.6	3080	23
6/30/2011	1.067	7.1	7.6	6.5	0.05	0.4	157.6	15.5	5.4	34.7	3.5	23	3.7	19.6	3080	23
7/31/2011	1.774	7	8.5	4	0.2	0.8	145.9	0.8	4.6	31.4	1.8	11.75	3.4	21.1	3020	2
8/31/2011	1.079	7.3	8.1	4.07	0.08	0.9	82.3	46.8	1.8	10.9	1.8	11.1	3.3	19.6	2560	91
9/30/2011	1.186	7	8	5.63	0.09	0.9	87.9	45.5	14.6	104.2	6.8	49.42	4.2	22.1	2890	2419.6
10/31/2011	1.45	7.1	8.3	6.49	0.15	0.9	48.3	15.5	3.2	24.58	7	54.65	3.3	23.88	2780	36
11/30/2011	1.352	7.3	7.8	6.43	0.37	0.6	52.4	11	3.8	25.9	5.1	35.3	3.5	26.5	3000	50
12/31/2011	1.571	7.4	7.7	5.17	1.38	0.8	85	17	4.3	27.32	4.5	29.77	4.4	22.05	2490	50
1/31/2012	1.25	7.2	7.77	6.46	0.17	0.43	99.98	66.6	3.33	23.01	3.26	7.58	3.96	25.82	2890	192
2/29/2012	1.272	6.9	7.5	5.82	0.097	0.94	73.6	10	3.5	27.66	3.05	24.78	3.96	26.73	2740	19
3/31/2012	1.57	7.1	7.4	9.13	0.077	0.64	51.6	5.5	2.5	23.81	1	9.41	5.25	33.54	2800	18
4/30/2012	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C	NODI=C

\* Effluent limit effective April 15, 2011  
NODI=C : No discharge during this reporting period. Effluent was reused by neighboring farmer to irrigate field.  
NODI=9 : Parameter not reported.